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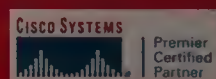
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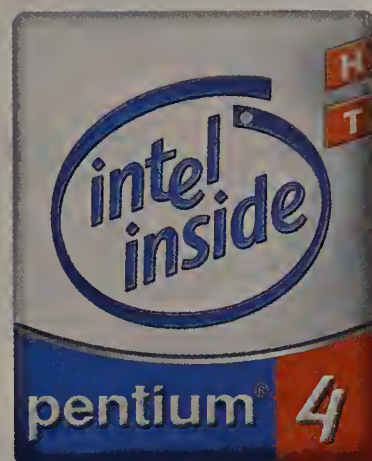
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The chassis fits nicely into your living room cabinet replacing your CD player, DVD player and radio tuner.

ZT GROUP recommends Microsoft® Windows® XP Media Center Edition 2005 for home computing and entertainment.



"It's flat and sleek, designed to slide into a home Entertainment cabinet and replace a DVD player, CD player and stereo tuner. It can be operated from the couch with a remote-control, allowing full access to a library of music, movies, home video and other digital entertainment". (LA Times 10/5/04)



Something that works the most buzz surrounded the PC home entertainment centers: streamlined systems from ZT Group that integrate TV, movies, music, slide shows and Web surfing (USA Today 11/22/2004 edition)
http://www.usatoday.com/tech/products/2004-11-21-bonus-pcs_x.htm



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\$479⁰⁰



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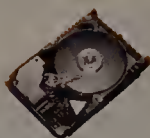


Hard Drives



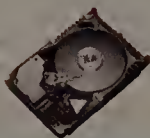
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Scorpio 2.5" 80GB 5400RPM EIDE
8MB Buffer - OEM



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Fujitsu MAS3367NP 36.7GB
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Motherboards



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Abit AX8 VIA K8T890 Chipset for
AMD Socket 939 CPU w/ Guru Clock



\$94⁰⁰

Gigabyte GA-K8NS Pro
Chipset for AMD Socket 754 CPU



\$75⁰⁰

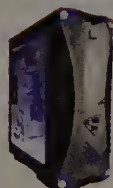
Foxconn K8S 760MG SiS 760
Chipset for AMD Socket 754 CPU

Cases



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Thermaltake Shark Black
ATX Full Tower Aluminum Case
Removable Motherboard Tray



Aspire X-Navigator
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Aluminum Case
w/ 500 Watts PS
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4MP 12x Optical 4x Digital Zoom



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Sony DSC-T1 5MP 2.5" LCD
3x Optical 2x Digital Zoom

Networking



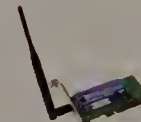
\$55⁹⁹

Netgear WGR614 54Mbps
Cable/DSL Wireless Router



\$76⁹⁹

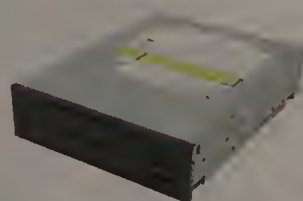
D-Link DI-624 AirPlus Xtreme G
108Mbps 2.4GHz Wireless Router



\$59⁹⁹

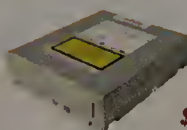
Linksys WMP54GS Wireless
G PCI Ethernet Adapter

Optical Drives



\$72⁹⁹

NEC ND-3500A 16x Dual Layer
DVD±RW ATAPI/E-IDE - OEM



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Sony DW-D22A 16x Dual
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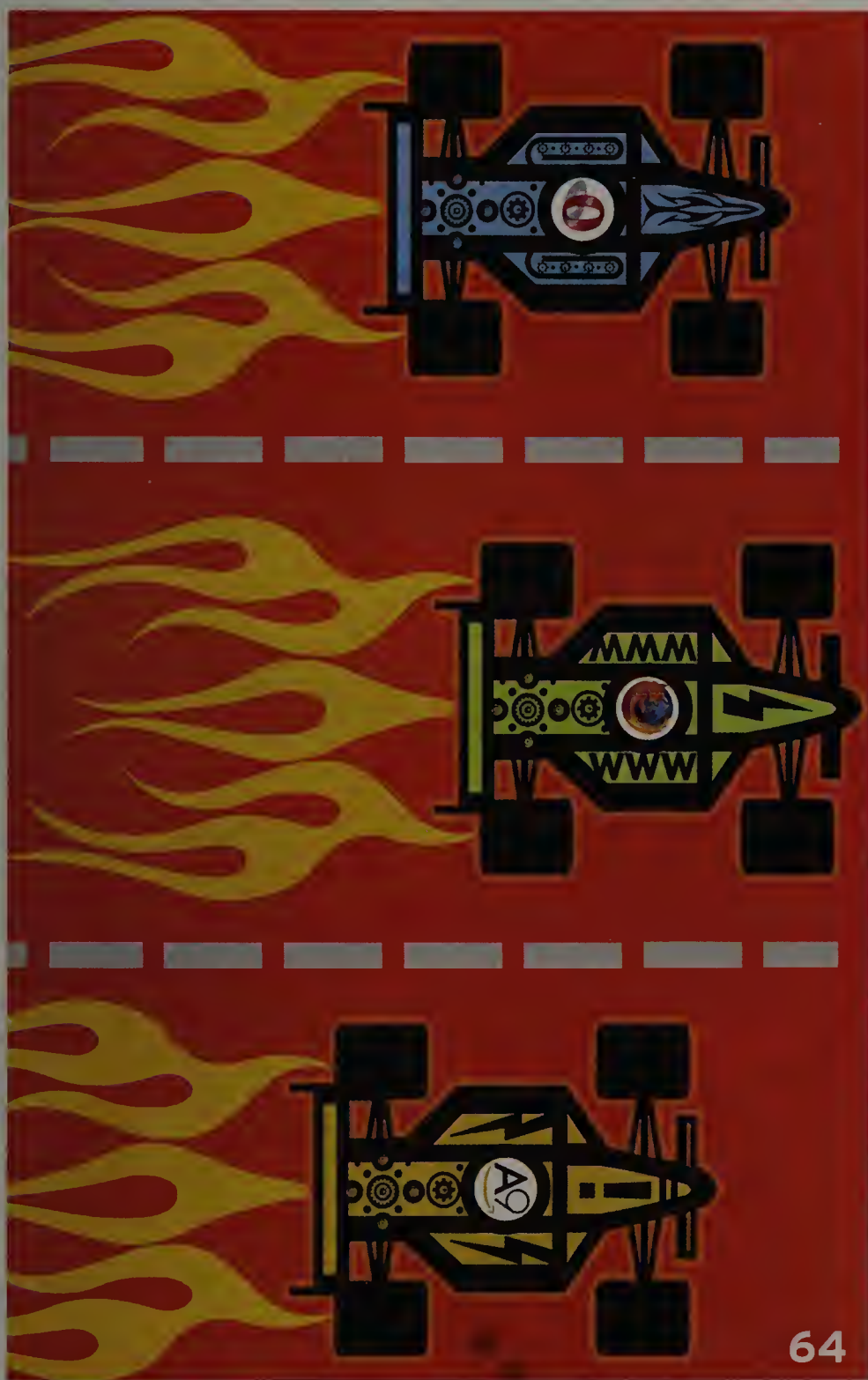
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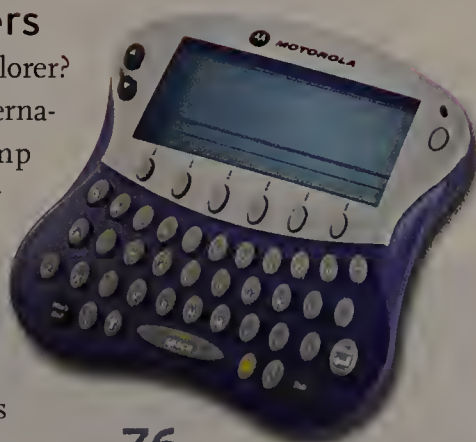


64

WEB TOOLS

64 The New Web Challengers

Feeling frustrated with Internet Explorer? Our tests of IE and four leading alternative browsers identify a new champ that's faster than Netscape, cleaner than Opera, and safer than IE. We also review IE shells—programs that make life with the old-timer more rewarding—and unearth a bonanza of searchable sites dedicated to opening up your world.



76

PC WORLD

FEBRUARY 2005

VOLUME 23 ♦ NUMBER 2

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FEATURES

MOBILE COMPUTING

76 Going Mobile

There are more ways than ever to stay on-line and connected while you're on the go—whether it's with a PDA/phone hybrid, a smart phone, a handheld PC, or a mobile instant messaging device. All may fit in a pocket or purse, but each serves different needs and has different limitations. We evaluate 12 contenders in these four categories to sort out which may be best for you.

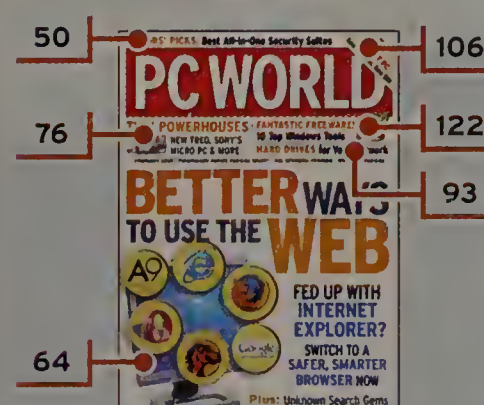
STORAGE

93 Net Drives

Network-attached storage products are affordable, compact, and easy to use, providing lots of hard-drive space to multiple connected PCs for sharing and backing up data. We evaluate ten models appropriate for small-business and home networks, and we detail the various issues you should keep in mind when choosing, installing, and using one of these devices.



ON THE COVER



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- 106 Spotlight: TV Tuners**
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- 111 In the Charts**
- 113 Top 15 Desktop PCs**
- 115 Top 15 Notebook PCs**
- 117 Top 10 Digital Cameras**
- 119 Top 10 Printers**
- 121 More Reviews**



DEPARTMENTS

- 17 Up Front**
Bloatware begone: Foxfire sets a trim new standard.
- 33 Letters**
Your take on anti-spyware tools and VoIP in a storm.
- 37 Consumer Watch**
PayPal outages offer customers a cautionary tale.
- 45 Home Office**
Use an external hard drive for quick, safe backups.
- 47 Bugs and Fixes**
A patch for attack ads; fixes for IE 6, Java, and VoIP.
- 140 Full Disclosure**
When the message directs you to the wrong media.



RESOURCES

- 14 How to Contact PC World**
- 133 PC World Marketplace**
- 139 Advertiser Index**

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COMING UP IN MARCH

Cheap PCs: A few hundred bucks can buy a lot, if you choose wisely. We tell you how to proceed.
Rejuvenate Windows: Don't want to buy a new PC? These tips help give Windows a new lease on life.

Hardware Hacks: Overclock your PC, unlock your cell phone, upgrade your MP3 player, and more.
Streaming-Music Services: What Net radio and music on demand offer, and how they stack up.

NEWS & TRENDS

- 20 Online Ads Get Smarter—and Sneakier**
A new technique camouflages ads as media files. We examine dangers and preventive measures.
- 24 Superfast Graphics**
NVIDIA's SLI technology uses two graphics cards in tandem to speed up demanding operations.
- 26 The (Movie) Empire Strikes Back**
With a spate of fresh lawsuits, the MPAA asserts its rights against illegal peer-to-peer file copying.
- 28 BTX Motherboards**
Intel's latest spec supports quieter, cooler PCs.
- 30 Plugged In**
No more Big Blue PCs; browser wars resume.

NEW PRODUCTS

- 50 Antivirus Suites**
McAfee Internet Security Suite 2005, Symantec Norton Internet Security 2005, Trend Micro PC-cillin Internet Security 2005
- 54 Smart Watch**
Fossil Wrist Net FX3005
- 56 Accounting Software**
Intuit QuickBooks 2005, Best Software Simply Accounting 2005
- 58 Portable Audio**
iPod Photo (40GB), Klipsch ProMedia Ultra 2.0 speakers
See page 51 for a complete list of new products reviewed.

NEXT GEAR

- 101 Radio, Reinvented**
Satellite radio increases its appeal, thanks to some nifty new hardware for XM and Sirius services.
- 104 Gadget Freak**
How to choose the right audio/video receiver.

HERE'S HOW

- 122 Windows Tips**
The best freeware to supplement Windows, with tricks from finding files to clearing away clutter.
- 126 Hardware Tips**
Connect devices to your PC with Bluetooth, USB, or FireWire; get a grip on your laptop.
- 130 Internet Tips**
Choose a default Web browser for your system.
- 131 Linux Tips**
Optimize Nautilus, the Gnome file manager.
- 132 Answer Line**
Protect your online identity; tweak your taskbar.

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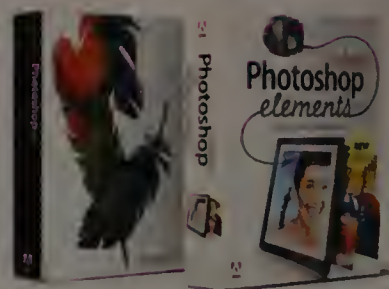
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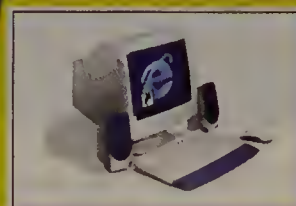
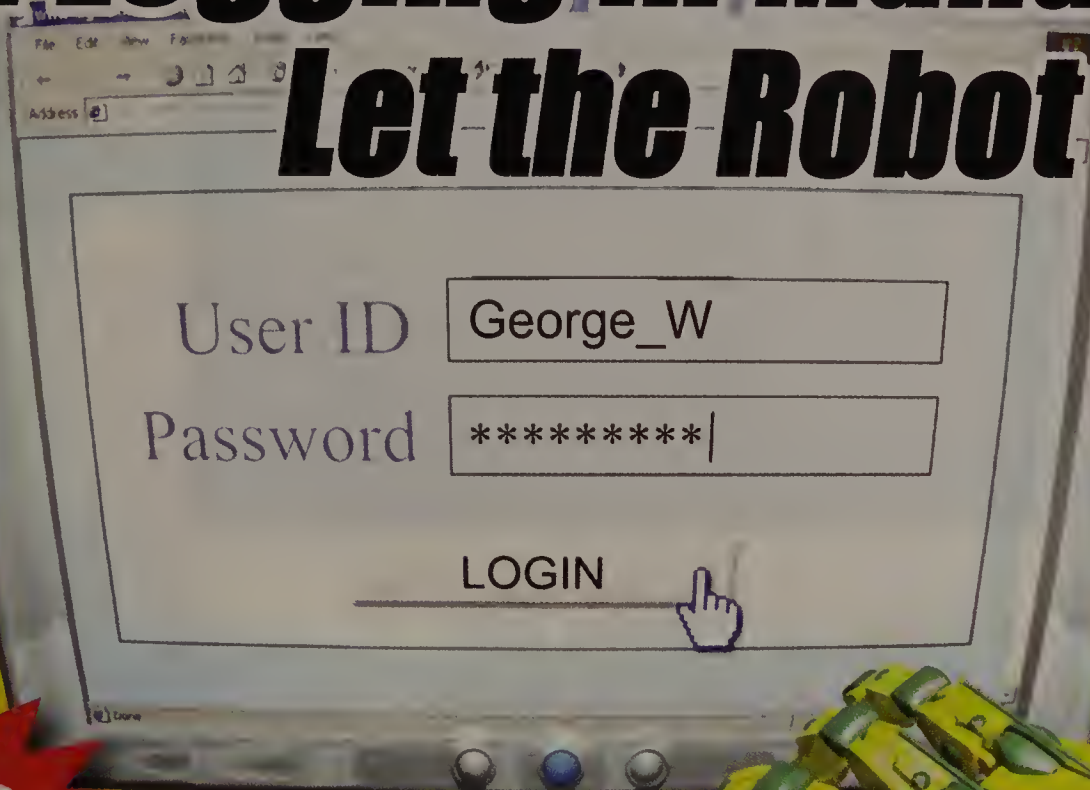
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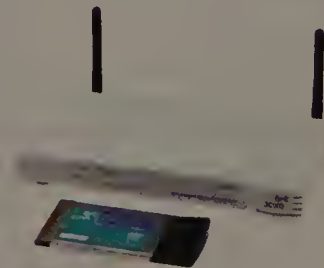
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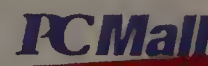
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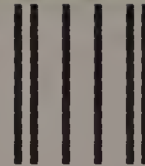
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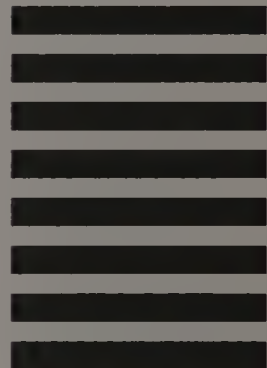
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How to Build Better Software: It's Simple

Firefox is mean, lean, smart, and rock-solid. Why is that so unusual?

BLOATWARE. It's an ugly term for an ugly phenomenon: the tendency of software developers to cram in every imaginable feature, including some that shouldn't have been imagined in the first place. Creeping featuritis rarely results in better programs. It often makes them harder to use. And

it can leave them sluggish, insecure, and unreliable.

Suddenly, though, I'm feeling optimistic that software isn't doomed to grow ever more portly and lethargic. The biggest reason for my upbeat mood is Firefox, our Best Bet among Web browsers in this issue's "The New Web Challengers" (page 64).

The fact that we're comparing browsers at all is in part a response to the accumulating user disgruntlement at a piece of bloatware—albeit aging bloatware—known as Internet Explorer. "There's never *not* been competition in the browser market," says Scott Spanbauer, the *PC World* contributing editor and *Internet Tips* columnist who rated browsers for the story. "But with Firefox, a small group of people made a browser that's faster and better." (Scott, a 20-year *PCW* veteran, should know: He's been reviewing browsers since IE was the underdog.)

Ironically, Firefox was born of bloat: It descends from Netscape Communicator, the kitchen-sink Net suite that morphed into the Mozilla open-source project in 1998. Pre-Firefox versions of Mozilla were corpulent, too: "At first, Mozilla involved putting in everything," says Scott. "With Firefox, they said, 'Let's keep it simple.'"

In other words, Firefox focuses on doing ordinary tasks uncommonly well. Its 'Find in This Page...' tool, for example,

SCOTT SPANBAUER, our veteran watcher of all things Web.



sits below the browser window, where it's both convenient and unobtrusive. In contrast, the Find features in IE and other browsers float on top of the page and may *hide* the word you're looking for.

Equally important are the things Firefox doesn't do at all—such as support Internet Explorer's ActiveX controls. These downloadable applets, which give IE new capabilities on the fly, introduce security risks that Firefox users don't incur. (True, some sites still use ActiveX and therefore insist that you use IE—but more and

more are adopting Web standards that ensure they'll work at least as well in Firefox.) Nor does Firefox hook deeply into Windows itself, another aspect of IE that has proved to be a mixed blessing at best.

Firefox isn't the only keep-it-simple tool

that rose from Communicator's ashes. Sharing its origins are Thunderbird (www.mozilla.org/thunderbird), an e-mail program; and Nvu (www.nvu.com), a Web-authoring app that's still in beta. All three programs have streamlined designs; run on Windows, Linux, and Mac OS X; and are absolutely free. As Scott points out, they add up to "a suite, but it's light, clean, and modular."

These apps aren't the most feature-rich in their categories,

but they don't feel dumbed down. Matter of fact, they feel smartened up—and I'd love to see everything from office suites to system tools take some cues from them.

Are you using any slimmer, smarter programs you'd like to tell the world about? Drop me a note at mageditor@pcworld.com, and I'll spread the word at Techlog, my *PCWorld.com* blog (blogs.pcworld.com/techlog). ■

Harry McCracken is the editor in chief of *PC World*.

THIS MONTH'S DIGITAL WORLD: A \$200 HDTV option, a headset that zaps background noise, and a personal robot are just a few of the products in "Innovations 2005," the cover story in *PC World's* companion publication. *PC World* subscribers can download *DW* for free in Adobe Reader format at find.pcworld.com/43830. *PCW* copies sold at retail outlets include the print version. Check out www.digital-world.com for more information.



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22 TRENDS IN ONLINE ADVERTISING

24 SUPERCHARGED GRAPHICS

26 MOVIE STUDIOS STEP UP THE WAR ON PIRACY

28 NEW MOTHERBOARD STANDARD FROM INTEL

30 PLUGGED IN

New Ad Attacks

ADS AND ADWARE HAVE A NEW WAY TO GET ON YOUR PC: VIA MUSIC AND VIDEO FILES. WE SHOW HOW THEY DO IT AND HOW TO STOP THEM. **BY ANDREW BRANDT AND ERIC DAHL**

THINK YOU'RE downloading a new song or video? Watch out—that file may be stuffed with pop-ups and adware.

PC World has learned that some Windows Media files on peer-to-peer networks such as Kazaa contain code that can spawn a string of pop-up ads and install adware. They look just like regular songs or short videos in Windows Media format, but launch ads instead of media clips. When we ran the files, we noted over half a dozen pop-ups, some attempts to download adware onto our test PC, and an attempt to hijack our browser's home page.

You can take steps to guard your PC against this ad invasion (see "Protect Yourself," opposite). But such ads aren't the only ones coming your way: Expect lots more multimedia ads and new networks



that track users online to deliver ads that match their interests (see "Ads Get Flashier, More Personal," page 22).

OFF-KEY EXPERIENCE

A READER initially alerted *PC World* to an ad-laden Windows Media Audio file, titled "Alicia

Keys Fallin' Songs In A Minor 4.wma." We then found two other WMA files and two Windows Media Video files that had been similarly modified. A firm called Overpeer released these files, we discovered.

Overpeer (owned by Loud-eye) first made news in mid-

2002 by offering its services to record companies looking to stop P-to-P pirates. It creates fake audio files that purport to be popular songs but play only a short loop of the track or an antipiracy message; then the file pops up a window offering the downloader a chance to

buy the song. By flooding file-sharing services with spoofed files, Overpeer makes finding real music files more difficult.

Marc Morgenstern, Loudeye vice president and general manager of digital media asset protection, says the files we found come from a different division of the company—one that targets users with promotions or ads based on the keywords they search for on P-to-P networks or in other venues.

Though the two businesses differ, the result is likely the same—a further reduction in the effectiveness of P-to-P networks. Morgenstern characterized Overpeer's actions as just deserts for people who illegally trade copyrighted works for free. "Remember, the people who receive something like [the media adware files], in some cases, were on P-to-P, and they were trying to get illicit files," he says.

FIRMS SURPRISED

PC WORLD contacted Microsoft and the seven ad-serving companies whose ads popped up when we ran the Keys

audio file. "We're looking into exactly what's going on with this file and checking to see if this particular model is in keeping with the licensing terms for Windows Media [Digital Rights Management]," says

The License Acquisition box quickly spawned many ad-laden IE windows.

David Caulton, group product manager for Microsoft's Windows Digital Media Division. "We wouldn't want to endorse anything that involved delivery of content that appears to be one thing, and then something else is delivered."

Only one of the advertising firms, Kanoodle, responded in time for our article. "Kanoodle stringently vets all prospective partners to determine in ad-

vance how they will distribute our sponsored links," wrote Lance Podell, the company's president. "As in this case, upon detecting or discovering any prohibited distribution activity, we eliminate it immediately." Indeed, Kanoodle's ads no longer appear when we launch the file.

DRM LOOPHOLE

A LOOPHOLE in the Windows Media DRM process allows companies to create ersatz media files and link them to adware. Normally, when you download a protected Windows Media file, you also receive a license that lets you play it. According to Caulton, if Windows Media Player can't find a valid license on your PC, it checks in with a remote system running Microsoft's Windows Media DRM Server.

You'll rarely see that happen. Some files, though, are set up to ask you for information before playing. They sometimes do this by displaying a Web page offering you a chance to buy the file you're playing or inviting you to sign up for ►

IN BRIEF

Tidbyte



EXPLOSIVE CELLS? After several reports of counterfeit batteries causing cell phones to blow up, Nokia has moved to help users identify authentic batteries. New Nokia batteries will include a label with a holographic image and an authentication code hidden under a scratch-off area on the label. Users can verify the code online or via SMS. Also, Kyocera and Verizon Wireless have recalled some of their phone batteries due to potential hazards (see find.pcworld.com/46264 and find.pcworld.com/46266).

Product Pipeline

5GB TO GO, PLEASE: It has never been easier to tote 5GB of data around, thanks to Seagate's 3-inch USB 2.0 Pocket Hard Drive. The \$200 mini hard disk has a unique yoyolike design, but its transfer speeds are poky (7 megabytes per second). By comparison, Memorex's matchbook-size, flash-based, 2GB USB 2.0 TravelDrive (\$200) boasts read/write speeds of up to 25/20 MBps.



TIPS

PROTECT YOURSELF

PREVENT BOGUS FILES LADEN with adware or spyware from infiltrating your PC, by taking the following steps.

- **Change Windows Media Player settings** to give you more warning. Select *Tools•Options•Privacy* and turn off *Acquire licenses automatically for protected content*. In the future, a dialog box will warn you each time a protected file attempts to get a license and will display the URL from which it will request the license. If you have doubts about the site, choose "No." Changing this setting in Windows Media Player affects any other players



you use that support Microsoft's DRM scheme.

- **Set your browser** to, at a minimum, prompt you prior to downloading any ActiveX controls. (In IE, choose *Tools•Internet options•Security* and click *Custom Level*.)
- **Use a pop-up blocker.** It won't prevent the initial ad or the first IE window spawned, but it will prevent further pop-ups from appearing on your PC.
- **Turn on automatic Windows updates** to make sure that IE holes are plugged quickly.
- **Run a firewall**, and monitor outgoing and incoming Internet requests.

a mailing list to get the content free. At least, that's the way it's supposed to work.

But since the license dialog box acts just like an Internet Explorer window, it can display whatever is on the page it points to—whether a legitimate call for license information or a series of pop-up ads.

When we played the modified files, the License Acquisition dialog box showed a page containing ads and quickly spawned more IE windows,

each containing a different ad.

Not only did we get bombarded with unwanted ads, but one of the ad windows in a video file tried to install adware onto our test PC surreptitiously, while another added items to our browser Favorites and attempted to change our home page. And a window from the original music file asked to download a file called "lyrics.zip," which contained the installer for 180search Assistant, commonly catego-

rized as an adware program.

The media files appear to run once the ads load, but they were devoid of video or music.

FIRST WAVE?

THE ADS in Overpeer's disguised media files may annoy some users. But malicious agents such as hackers and thieves could exploit the DRM loophole to do far worse. For example, criminals could load modified media files with keystroke loggers or other soft-

ware for taking over your PC.

The difficult part of invading someone's PC is enticing a user to click a link or file to be infected, says Johannes B. Ullrich, the chief technical officer for the SANS Institute's Internet Storm Center, a security group. Hacked media files could give criminals the perfect bait with which to lure unsuspecting users.

Senior Reporter Tom Spring contributed to this report.

TRENDS

ADS GET FLASHIER, MORE PERSONAL

NO LONGER ARE ONLINE advertisers content to litter your screen with pop-ups, banner ads, and the like—now you're in for a multimedia ad experience. As you've likely noticed when you surf the Web, more sites (including PCWorld.com) are using ads that play short video clips—like previews for an upcoming movie—or interrupt your browsing by appearing between pages as you surf, or drop down over the content you're trying to access, often with accompanying music or other animation.

In 2004, advertisers spent about 8 percent of their total online advertising dollars on such ads, called rich media ads; that should grow to 25 percent by 2008, according to EMarketer, a New York-based research company. Better video compression and steady growth in the number of broadband users make the ads possible—and you'll be seeing lots more of them.

Web sites claim that they receive far less negative feedback about rich media ads than they do about pop-ups, says Jim Nail, a principal analyst with Forrester Research. People may be less offended by the ads because they usually disappear on their own, and because they tend to be more entertaining than pop-ups, he says.

Many sites cap the frequency of rich media ads, too, in some instances exposing users to a maximum of one such ad per day, Nail says. Advertisers initially did the



ADS WITH ANIMATION, ads that overlay a page's content, and ads that use cookies to track you as you surf are replacing pop-ups.

same thing with pop-ups; later, however, as online marketers grew frantic to bring in more customers, the pop-up floods began.

TARGETED ADS

WHAT ELSE IS SLOUCHING toward you online? "One of the biggest trends right now is behavioral targeting: the ability to identify a user's patterns online and serve them more relevant ads," says Greg Stuart, CEO of the Interactive Advertising Bureau.

Behavioral targeting isn't new. Doubleclick (used by PCWorld.com) tried and then ended such a service in the late 1990s because irate users feared their online habits were being tracked and matched to their name and postal address. But the most prominent new service, Tacoda's Audience Match Net-

work (launched last November) doesn't identify individuals, say industry analysts.

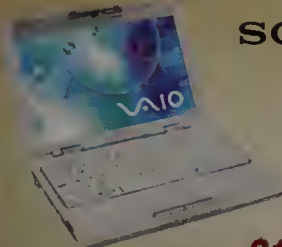
Tacoda's ads—simple text ads with supposedly high relevance—resemble those developed as part of Google's AdWords program, which displays ads related to the terms a Google user has searched for.

With Tacoda, "users are placed into buckets, depending on their browsing habits, of areas they seem to be interested in," says Dave Morgan, the company's CEO. A user who reads an article at USAToday.com on new cars, for example, may be labeled a car buyer. When she surfs to another Tacoda network site, she may see ads designed for car buyers. "No actual personal information about consumers is used in our service," Morgan says. Nevertheless, Tacoda's network may track users for significant lengths of time, depending on whether the user's classification is a temporary condition, such as car buyer, or indicates a long-term hobby, such as golfing.

According to a company statement, by the end of its launch phase in early 2005, Tacoda expects more than 1000 advertisers and 1000 sites will be using the service.

Because Tacoda uses cookies to track users, employing a cookie blocker should prevent inclusion in the service. No rich-media ad blockers exist yet, but they should appear as these ads become ubiquitous.

—Liane Cassavoy


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FIRST LOOK

Superfast Graphics

SLI TECHNOLOGY TEST: TWO GRAPHICS BOARDS REALLY ARE BETTER THAN ONE.

A NEW TECHNOLOGY that allows a PC to use two PCI Express graphics boards in tandem delivers the fastest graphics performance we've ever seen. We tested a system built with NVidia's SLI (Scalable Link Interface) technology and saw a dramatic performance boost in newer games played at high resolutions—though older, less graphics-dependent games showed little or no benefit.

SLI'S SPEED BOOST

ALAS, SLI ISN'T something you can graft onto your current PC. You'll need a new SLI-ready motherboard featuring NVidia's own NForce4 PCI-Express chip set for Athlon 64. Four NVidia PCI Express graphics cards currently support SLI: the midprice \$200 GeForce 6600 GT; and the high-end 6800, 6800 GT, and 6800 Ultra models, which

cost between \$300 and \$500 apiece. In addition, Alienware makes a \$6000 dual-Xeon SLI PC, and Gigabyte has been developing an SLI motherboard based on Intel's 915 chip set. NForce boards built to work with Intel CPUs are still a few months away from readiness.

We tested a preproduction Asus A8N-SLI Deluxe motherboard with 6800 GT cards in both single and dual (SLI) configurations, using an ATI X800 board as a reference point. Older games such as Return to Castle Wolfenstein, Comanche 4, and Unreal Tournament 2004 depended less on the graphics board, and they showed little or no performance gain with SLI. In some cases, the SLI setup ran a frame or two per second slower than the system configured with the single card—most likely due to SLI overhead.

With newer GPU-centric

ASUS'S A8N-SLI Deluxe lets you install two PCI Express graphics boards to up 3D speed.

games like Doom 3, Halo, and Far Cry, SLI showed a noticeable but inconsequential improvement in frame rate at 1024 by 728 resolution. When we expanded the pixel grid to 1600 by 1200, however, SLI strutted its stuff—offering gains of up to 56 percent over the single-card setup with antialiasing enabled.

All in all, SLI delivered the fastest graphics performance we've ever tested. A completely loaded SLI system is expensive, but if you're buying or building a new PC, it's nice to know that you could dramatically enhance its graphics performance by adding a second card later.

And if even an SLI system isn't fast enough for you, you can milk every last drop of speed out of your system by using NVidia's NTune; this downloadable utility works with

NForce motherboards to permit you to overclock your system—that is, run its memory, graphics card, and buses at faster-than-standard clock speeds. NTune will benchmark and automatically adjust your PC for best performance, or you can tweak individual settings as you see fit.

OVERCLOCKING

USING NTUNE ON a preproduction MSI K8N Neo4 Platinum NForce4 graphics card, we were safely able to increase our test system's graphics performance by almost 3 percent (gauged conservatively) for gaming and then to reduce performance by nearly 3 percent so the PC could run cooler and quieter, and use less energy while we played DVDs or downloaded large files. Once you've perfected your settings, you can save them for future use. NTune also lets you monitor your PC's temperatures and voltage—an essential feature for debugging overclocking settings.

—Jon L. Jacobi

TEST REPORT

SLI BOOSTS GRAPHICS SPEED

IN GRAPHICS-INTENSIVE 3D GAMES such as Doom 3 and Far Cry, the dual-graphics-board SLI configuration improved performance over a single card.

GRAPHICS SETUP	Doom 3 1600 by 1200 resolution (no antialiasing) ¹	Doom 3 1600 by 1200 resolution (with antialiasing) ¹	Far Cry 1600 by 1200 resolution (with antialiasing) ¹
ATI Radeon X800 XT (single)	43	29	20
NVidia GeForce 6800 GT (single)	52	31	36
NVidia GeForce 6800 GT (SLI)	64	48	56



FOOTNOTE: ¹All results in frames per second. **HOW WE TEST:** We tested each graphics setup on a preproduction Asus A8N-SLI Deluxe motherboard equipped with an Athlon 64 3500+ CPU, 1GB of DDR400 SDRAM, and a 250GB Western Digital SATA hard drive, running Windows XP Pro.



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CONSUMER ALERT

The (Movie) Empire Strikes Back

HOLLYWOOD SUES HUNDREDS OF FILE SHARERS AND HOBLES HARDWARE IN WAR ON PIRACY.

HOLLYWOOD has embarked on another antipiracy campaign. Spooked by powerful PCs and broadband pipes that make it ever easier to copy and share films, the movie industry is expanding its legal and legislative offensive against perceived threats.

That effort has led to 200 lawsuits against users for allegedly trading movies over peer-to-peer networks. But it also threatens to restrict further what you can do with content you purchase and what products get developed at all.

The war has already prompted vendors to strip features from products like DVD burners, personal video recorders, and other devices that can record or stream video. It has also forced software vendors such as 321 Studios, makers of controversial DVD copying software, to close shop. A hundred operators of servers supporting BitTorrent file-sharing software may share 321 Studios' fate: In December, movie studios represented by the Motion Picture Association of America also sued them.

LIMITS ON YOU

"WE DO HAVE concerns that Hollywood, in an effort to protect its intellectual property, is going to stifle what a consumer can do with content that is lawfully acquired," says Jeff



Joseph, Consumer Electronics Association spokesperson.

Fair use—a legal doctrine that recognizes your right to, say, mix a CD for your use—is under attack as copyright owners redraw lines defining what constitutes fair use in the digital age. Copyright concerns have already led to restrictions on new products. Entertainment servers—a new class of devices intended to enable

other copyright protection. The FCC approved the broadcast flag, which is meant to prevent digital broadcast signals from being endlessly copied, whether for personal use or for commercial purposes. Under the FCC's ruling, new digital video recorders, TVs, PCs, and the like must, by July 2005, recognize the flag. The flag, which is sent along with the digital stream, tells compliant

Copyright concerns have already led to restrictions on emerging products.

users to store and distribute their movies, music, and photos throughout their home—typically can't archive your DVD collection, because practically all current means to do so violate 1998's Digital Millennium Copyright Act. DVD streaming via a home network is another casualty of the battle over copyright and piracy.

This past year, the Federal Communications Commission granted the MPAA fur-

ther copyright protection. The FCC approved the broadcast flag, which is meant to prevent digital broadcast signals from being endlessly copied, whether for personal use or for commercial purposes. Under the FCC's ruling, new digital video recorders, TVs, PCs, and the like must, by July 2005, recognize the flag. The flag, which is sent along with the digital stream, tells compliant

devices whether and how often a show may be copied, and whether copies can be transferred to other devices. "Consumers are losing their choices of what they want to record and how they want to watch it," says Art Brodsky, communications director of Public Knowledge, a fair-use advocacy group. The group is challenging the FCC's ruling on the broadcast flag in court.

Next on the MPAA list of

objectionable technology is TiVo. The MPAA opposes the new TiVoToGo feature, which lets users transfer saved programs or movies to a laptop or PC on a home network. Fritz Attaway, the MPAA's executive vice president and legal counsel, said in a statement, "We don't have a problem if you want to move the content to your summer home or to your boat, but the TiVo application does not require any kind of relationship with the sender. It could be [sent] to a nightclub in Singapore."

LIMITS ON NEW TECH

EFFORTS TO PROTECT copyright may restrict product development, too. Some of this threat stems from last year's proposed Induce Act, a bill primarily aimed at P-to-P software vendors. The bill would make it a violation of copyright to entice, trick, or otherwise facilitate others into violating copyright. But the bill was written so broadly that critics feared it would discourage any technical innovations that could conceivably be used for copyright violation. Some observers argued that if the bill had been law 20 years ago, we would not have VCRs today. The bill died in Congress, but proponents are likely to reintroduce it this year.

Whether any of these measures will slow piracy—the MPAA puts industry losses at about \$3.5 billion per year—remains an open question. Either way, law-abiding users are likely to lose some choices.

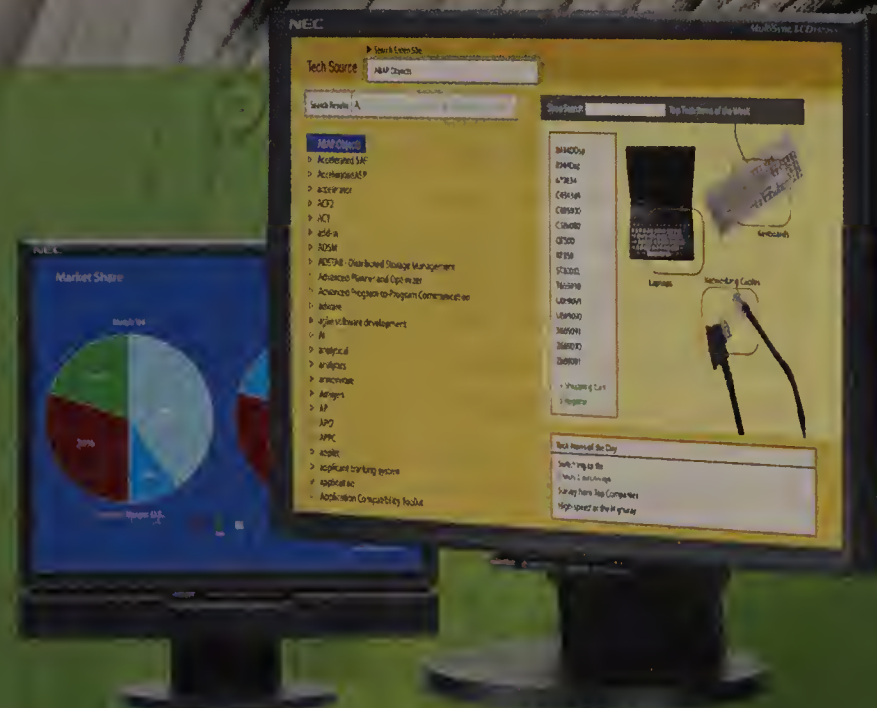
—Tom Spring

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DESKTOPS

First BTX Motherboards Hit Shelves

PCs USING THE NEW STANDARD SHOULD BE QUIETER, THANKS TO FEWER FANS.

INTEL'S NEW BTX (Balanced Technology Extended) specification gives motherboards a makeover. The company says that the new motherboard and chassis spec uses fewer fans, resulting in PCs that run more quietly, and possibly at a lower temperature, than those based on the aging ATX (Advanced Technology Extended) standard found in most of today's PCs. To that end, BTX boards sport significant changes in component layout and thermal engineering (see picture).

FIRST BTX BOARDS

Though Intel has been promoting the spec for a while, the company only recently rolled out its first retail BTX boards. It expects to offer three variants (all 10.5 inches long): standard BTX, with seven or fewer PCI Express slots (up to 12.8 inches wide each); MicroBTX (pictured, up to 10.3 inches wide), with four or fewer slots; and PicoBTX, with one slot (up to 7.9 inches wide).

Intel's first two boards are both MicroBTX models; the chip maker has begun shipping CPUs with the Type I BTX Thermal Module (which replaces the traditional heat sink and fan combination; see picture), too. Companies such as AOpen have begun to offer BTX-based chassis, since you can't place a BTX motherboard and Thermal Module in

an ATX case. Expect standard BTX and PicoBTX boards to emerge sometime this year.

Intel insists the new spec will benefit the PC industry as a whole. Certainly most peo-

ple want a quieter PC. *Microprocessor Report* editor-in-chief Kevin Krewell notes, though, that one of Intel's motives for creating BTX was to deal with the Pentium 4's heat prob-

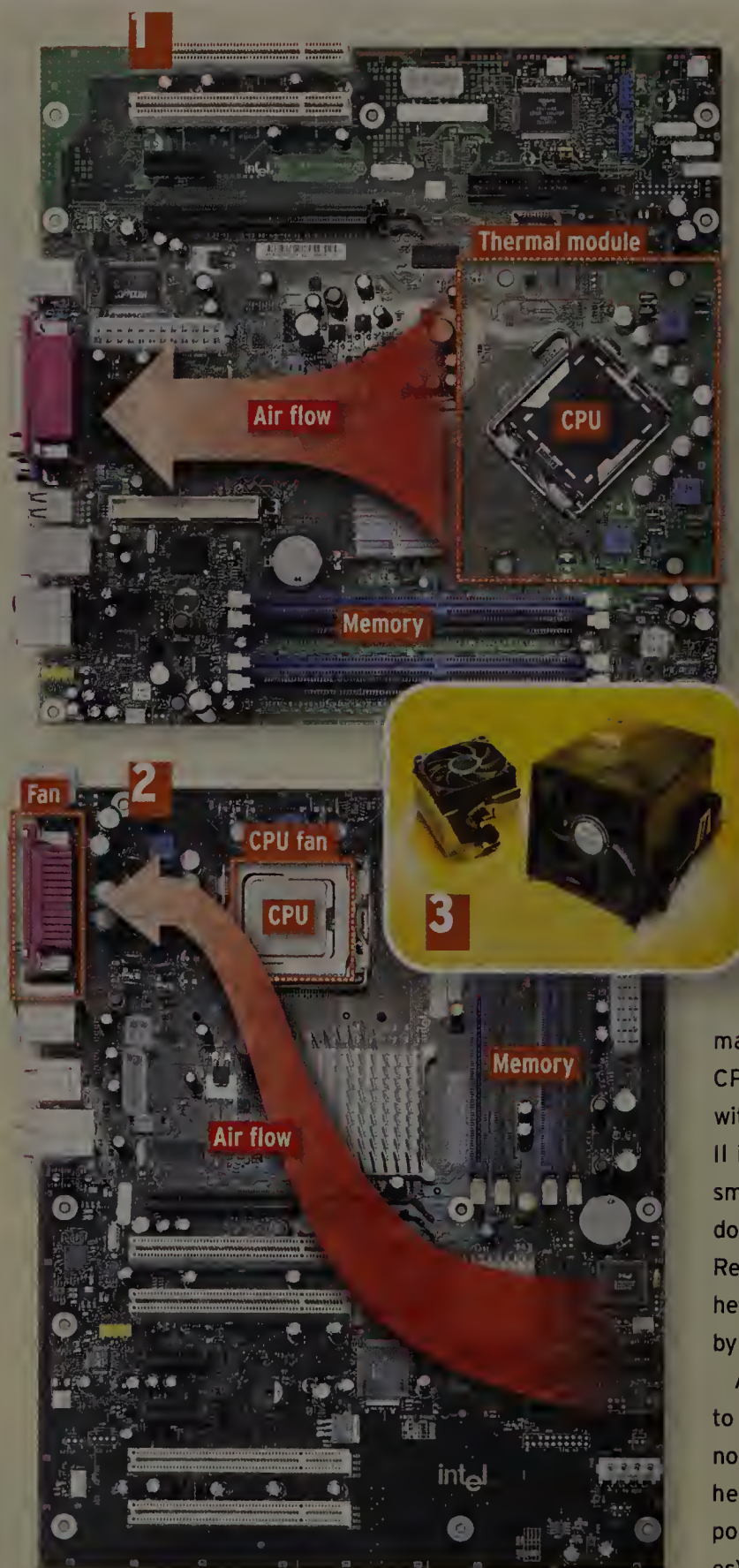
1) BTX boards situate internal components so that one fan (part of the BTX Thermal Module) can cool them all. The module sits at the front of the board, drawing air into the case over the parts that produce the most heat: the CPU, the chip set, and the graphics card. On most BTX chassis, no fan is required aside from the power supply's fan and the dedicated fans on some graphics cards.

2) Most ATX cases have no front fan; instead they rely on one or more fans in the rear and sides of the case to draw air through a PC's face, through its chassis, past a centrally located second CPU fan and heat sink, and out the back.

3) Intel will offer two Thermal Module types with its retail CPUs. Type I (pictured) works with a wide range of cases; Type II is a lower-profile design for smaller PCs. With BTX cases, vendors will include a metal Support Retention Module, to handle the hefty (2.8 pounds, and 5.4 by 3.9 by 4.5 inches) Thermal Module.

AMD says that it has no plans to make its own Thermal Modules, noting that its current standard heat sink and fan (pictured; 0.8 pounds, and 3 by 2.3 by 2.8 inches) adequately cool its CPUs.

—Tom Mainelli



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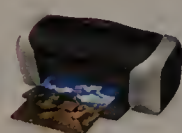


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PLUGGED IN

STEVE FOX

Bye-Bye, Big Blue; Hello, Lenovo?

PLUS: NETSCAPE'S TRIUMPHANT RETURN, AND PDA MEETS ULTRALIGHT

BIG BLUE STOPS BUILDING PCs

The Buzz: With IBM selling its PC business to China's Lenovo Group, Big Blue boosters are gnashing their teeth in dismay. But think about it: When was the last time you actually saw an IBM-branded desktop? The real prize here is the corporate fave ThinkPad notebook line, known for its reliability and sturdy support. Both parties insist product availability and customer support will be unaffected. We'll see.

Bottom Line: Customers paid a premium for the IBM name; Lenovo sounds more like a drug you hear about in those



oddly worded ads during football games. "If you experience boot times lasting longer than 4 hours, consult your IT specialist immediately."

NEW NETSCAPE

The Buzz: The Netscape browser, which for years had been moldering in the Old Age Home for Neglected

Apps, is back. AOL's "prototype 0.5.6+"—put into limited beta release at the end of last year—is chock-full of navigational goodies, customization options, site-by-site security controls, and a user interface that preserves Netscape's traditional soothing green façade. Built on Firefox's Gecko engine, the reborn Netscape handles tabs nimbly and includes a two-click option for displaying pages in Internet Explorer (for sites that insist on that kind of thing). Public betas will follow, with a full release expected later this year.

Bottom Line: As leaky IE continues to shed users, Netscape just might click for folks who want security but would rather not tinker with the modular flyweight Firefox. Still, do we really need another browser?

A NEO CLIO

The Buzz: The stylish sub-3-pound Clio NXT—8.75 by 11.25 inches by 1 inch thick—is a Windows CE device that feels like a notebook. Data Evolution's latest entry (due out in April) runs on Intel's 400-MHz XScale chip, sports an 85-percent-of-full-size keyboard, and has a swivel screen that doubles as a tablet. The 802.11b-enabled wireless device supports various plug-in slots and connectors, audio in and out, video

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2 GROUPER.COM. Intriguing peer-to-peer social networking site for sharing media with groups of your friends.

3 SUNROCKET. It's official. VoIP is now a commodity. Witness this \$199 deal for one year of domestic calls (sunrocket.com).

4 BEYOND MEDIA. Fool your machine into thinking it's a Media Center PC with this \$50 software package (snapstream.com).

5 ZIGBEE. Low-power wireless home automation network with a silly name (zigbee.org) connects gizmos, electronics, and even a phone from South Korea's Pantech&Curitel.



out, handwriting recognition, and a slate of clone apps that read and edit Excel, PowerPoint, and Word files.

Bottom Line: Nestled between high-end PDAs and low-end laptops, the \$999 Clio remains an enterprise play. But some users will be tempted by its instant-on ease and its purported 8-hour battery life. ■

Contact PC World Contributing Editor Steve Fox at steve_fox@pcworld.com. Visit find.pcworld.com/31643 to read additional Plugged In columns.

NEW THREAT

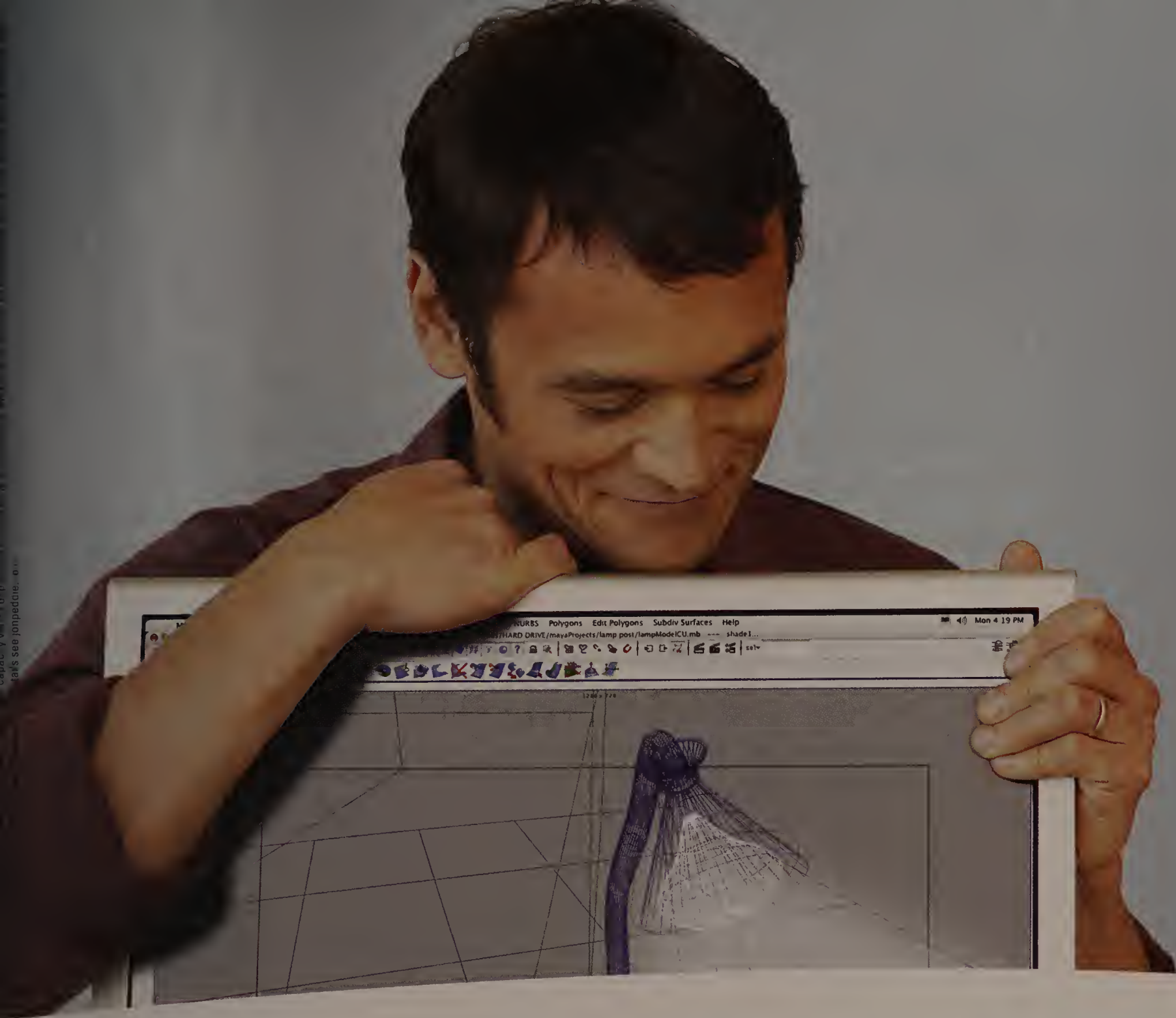
Trickier Phishing

Accept the Offer

Credit Card Number: Expiry Date: Name on Card:

THE LATEST PHISHING trick exploits an old security hole. According to Vikram Desai, CEO of app security firm Kavado, the links in the phishing e-mails contain an attack script that, when clicked, "replaces legitimate

content on the company's site with a form controlled by the hacker." By taking advantage of the "cross-site scripting" hole in some poorly secured Web sites, a phishing e-mail can insert malicious code into a page on a legitimate site. Most of the page may be real content from your bank, but fill in the proffered form, and you've been phished. Want to be safe? Never click the links in a suspect e-mail; just open your browser and enter the site's main URL.



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A man in Rhode Island was arrested after allegedly knocking out an armored-car driver and stealing the closest four bags of money. Apparently, the bags he snatched contained only pennies, and weighed well over a hundred pounds. Police caught up with the man, hunched over and gasping for breath, just a few blocks away.

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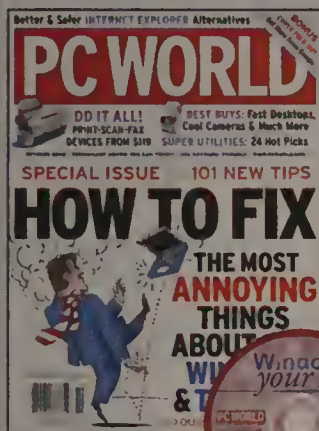
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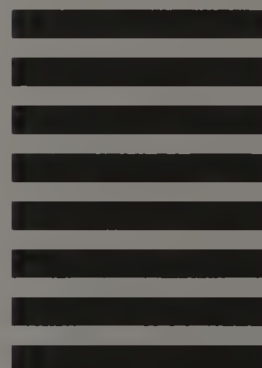
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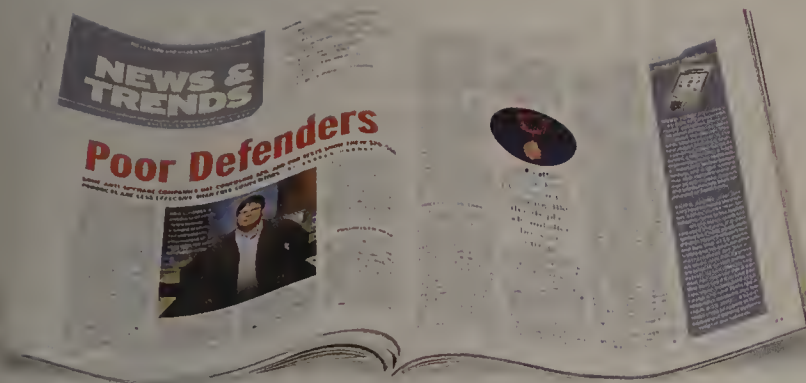
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SHEDDING LIGHT ON 'POOR DEFENDERS'

WHAT A PLEASANT experience to read a well-researched, well-balanced, and well-edited article—"Poor Defenders" [*News and Trends*, December]. I appreciate the many writer-editor hours it took to produce the story. The results merited your investment. You have provided solace to us computer novices who fear viruses corrupting our computers and spyware stripping us of our privacy.

Don Reilly, via the Internet

I HAD ONE of the apps you tested, Spyware Stormer, installed on my Windows XP PC. I used your suggestion of combining Spybot and Ad-Aware, with excellent results. They removed some things I could not remove even when using Windows' Add and Remove. I am no longer disappointed in anti-spyware tools.

Paul Rumberger, via the Internet

I COULDN'T AGREE MORE with the advice of Eric L. Howes, the analyst for SpywareWarrior.com. Since no single program can eliminate all spyware, pop-ups,

viruses, and Trojan horses, I have been using all of the utilities he mentions since long before your article appeared. I currently employ Ad-Aware SE, Search & Destroy, Norton Utilities 2005, PestPatrol, and ZoneAlarm Pro. I run all of them on a weekly basis, and I have not had any problems.

Daniel Rosenbaum, Las Vegas

I AM SURPRISED Panda Platinum Internet Security software was not recommended. I purchased the Panda software from Amazon for a mere \$17 plus shipping. I installed it, and—voilà—no more spyware problems. I highly recommend this program.

Marcy Hamann, via the Internet

MEDIA CENTER 2005: UPGRADE?

YOUR DECEMBER ISSUE looked at the Windows XP Media Center 2005 operating system ["New Media Center OS Plays Well," *News and Trends*]. People who have Media Center 2004 may assume that upgrading to 2005 will be easy. A year ago I bought a Sony PC with Media Center 2004. Now, Media Center extender devices are beginning to appear. The bad news: To use many of these devices, you must run Media Center 2005. Microsoft told me that I must upgrade through my PC's manufacturer, Sony. But I learned that Sony doesn't offer an upgrade to 2005—I'd have to purchase a new PC!

John Welter, via the Internet

TELL US WHAT YOU THINK

VISIT www.pcworld.com/pcwininput and rate this issue—you might win a \$500 Circuit City gift certificate (for retail or online) in return for giving us your feedback. You'll need the subscriber number from your mailing label to take this survey online. The site explains the official rules and also details how to participate if you're not a *PC World* subscriber.

Editor's response: It is possible (but not easy) to upgrade; see Senior Associate Editor Eric Dahl's blog at find.pcworld.com/45928.

CRYPTIC PHOTO SOFTWARE

REGARDING DECEMBER'S "Do More With Digital Photos": Experts like your authors may find programs such as Adobe Photoshop Elements useful, but I suspect that the typical home user will (as I did) experience considerable frustration and disappointment. Despite my having attempted to use Photoshop Elements at least 20 times, I have yet to successfully process my first photograph. Photoshop will tell you in great glittering generalities *what* you can do, but it is not helpful at telling you *how* to do it.

Duane Olson, San Benito, Texas

MEDIA HANDHELDS' AUDIO

I THINK Sam Jemielity's article ["Entertainment to Go," December] missed his audience's main interest (or at least mine) by failing to review audio quality, even though he says this was one thing he tested. Size, functionality, and ease of use won't mean much if the audio quality is poor.

Pete Dietz

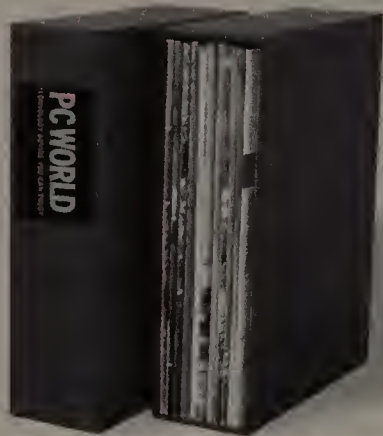
West Milford, New Jersey

Editor's response: We should have noted that audio quality was uniformly high in all the players on our charts. —Anne B. McDonald

VoIP DEFENDED

IN DECEMBER'S "Letter of the Month," reader Ron Oppenheim wrote that he "will not be an early adopter" of Voice over Internet Protocol phone technology because of power failures during the hurricanes. However, many VoIP providers have backup plans. Should your VoIP modem fail or lose power, your phone service can be forwarded to another telephone number of your choice—to a ►

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LETTERS

cell phone, for example. This is a default setting, automatically implemented during such failures, and it worked for me during the storms. Landline service in my area, by contrast, *was* disrupted.

Ed Schneider, Sarasota, Florida

BETTER LATE THAN NEVER

I ALWAYS ENJOY reading *Full Disclosure*. I thought Stephen Manes was at his best in his September column, "The Last Manual You'll Ever Need!"

I found one of his spoof examples particularly funny. He says, "If your copy of this product is in bound form, do not attempt to use it in a pitch-black room."

Actually, some bound products *can* be read in a pitch-black room, including *PC World*. I receive a version of the magazine that uses a different technology—not a new development from a high-powered company, but an old one called Braille—from the National Library Service of the Library of Congress, and it reads very well in the dark. This version comes about two months after my print copy, but having used Microsoft products for years, I have learned to be patient, adopting the philosophy of better late than never.

Richard Wright, via the Internet ■

CORRECTIONS

IN JANUARY'S *Top 10 Monitors*, we should have indicated that the LaCie Photon19vision has a two-port USB 1.1 hub, and that the LG Electronics Flatron L1930B does not have a USB port.

December's "Tech 2005" should have said that the Sony Qualia 005 TV line uses red, green, and blue Luxeon light-emitting diodes to backlight its screen.

The chart in December's "Do More With Digital Photos" should have stated that Jasc's Photo Album 5 Deluxe Edition does have quick-fix tools (located under the program's Enhance tab).

In December's *Top 10 Printers*, we should have said that the Canon Pixma iP1500 has a maximum color resolution of 4800 by 1200 dpi, and that its rated speeds are 18 ppm monochrome and 13 ppm color (draft mode).

PC World regrets the errors.

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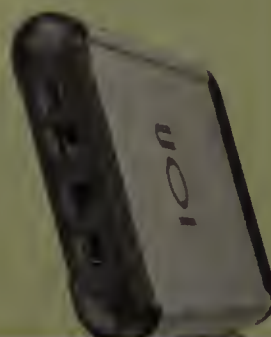
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The Problem With PayPal

Many of the payment service's users are dissatisfied, but alternatives are few.



ASK KRIS SLEEVENS what he thinks of PayPal, and you won't hear too many friendly words. Sleevens, who used PayPal to accept payments for his Web hosting firm, HostMerit, in Berkeley Heights, New Jersey, was one of thousands of merchants caught when the online payment company's site was sporadically unavailable for nearly a week last October.

PayPal officials blamed the problem on a faulty software upgrade; it locked some customers out of their accounts and scotched a number of transactions (go to find.pcworld.com/45774 for details).

As if losing potential clients and revenue weren't enough, PayPal's system failure also caused Sleevens to lose out on a used car he had planned to purchase that week. For four days, he was unable to access his PayPal debit/ATM account, despite dozens of calls to customer support. By the time he did access his funds, the seller's deadline had passed.

ONCE BURNED

THE EXPERIENCE PROMPTED Sleevens to sign on with several alternative payment services to avoid being burned again. "I've

used PayPal as my main payment processor since I started my business, and it's often had random glitches here and there," he says. "But this shows that it's not a bank. With all the money that runs through its servers, it needs a disaster recovery plan, system backups, and better communication with customers. Basically, [PayPal] needs to reassure me of why I should let my business depend on it."

It's a reasonable request, especially for users like Sleevens whose livelihood depends on the system's integrity. But even casual PayPal users might understandably be feeling a little wary these days. Last fall's system outage happened on the heels of a class-action lawsuit settlement in which PayPal—while denying any wrongdoing—agreed to pay more than \$9 million to customers who felt that the company had unfairly and improperly restricted their accounts. (PayPal, which attributed the account restrictions to fraud prevention measures, reports that it has changed its procedures.)

SHOW ME THE MONEY

PAYPAL SPOKESPERSON Amanda Pires admits that the site had "intermittent issues" in October. "We know that these issues caused an inconvenience to our customers, and for that we apologize."

Problems notwithstanding, PayPal sets the standard when it comes to person-to-person online payments. The company, which was acquired by EBay in 2002, boasts over 56 million accounts and processes more than 27 million transactions a month. About 70 percent of PayPal's total payment volume comes from auctions, most of them on EBay. One ►

of its few major competitors, Yahoo's PayDirect, shut down its servers last November due to a lack of users.

And frankly, if you're just trying to send a quick 50 bucks to some stranger in St. Louis who's selling vintage baseball cards, PayPal fits the bill perfectly: It's a fast, easy way to send cash to someone you don't know without compromising your personal information.

Basically, it works like this: The buyer goes to the PayPal site (or to a site with PayPal integration, such as EBay) and enters the seller's e-mail address and the amount to pay. The seller receives the e-mail message, goes to PayPal, and collects the payment in his or her PayPal account.

PayPal solves a simple but important problem in online commerce, by allowing people to exchange money electronically rather than having to rely on writing checks, according to Penny Gillespie, a senior analyst at Forrester Research.

While PayPal may sometimes act like a

bank, it isn't. The company itself is "subject to very strict consumer policies and regulations, but it's licensed as a money transmitter, not a bank," Pires says.

Though money transmittal services such as PayPal are regulated in many states, they're considered "nonbank fi-

PayPal's customers aren't covered by federal banking protections.

nancial institutions" and aren't FDIC insured, which means that their customers aren't covered by federal banking protections. That's important for consumers to understand before they enter into a service agreement with a money transmitter, according to Jeffrey Taft, a

partner at the Washington, D.C.-based law firm of Mayer, Brown, Rowe, and Maw, who specializes in consumer financial services. "Because banks are subject to so many rules, regulations, and disclosures, they're much more accountable for consumer complaints. Consumers should understand that their transactions on a service such as PayPal are largely governed by their agreement with PayPal, and there's no omnibus regulator overseeing the company's activities."

Many PayPal competitors have closed, but a few are left. BidPay (www.bidpay.com), for example, a subsidiary of Western Union, is intended only for online auctions. It lets buyers complete transactions by direct deposit into a seller's checking account or by money order.

Another option is IKobo (www.ikobo.com), a general-purpose money transfer service that operates in over 170 countries. Buyers and sellers send and receive money by using an I-Kard—a special, ►

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Biometric Passports Fail Early Privacy Tests



FEDERAL OFFICIALS, eager to step up controls on people entering the United States, are preparing to issue Americans passports with embedded personal and face-recognition data. It's a good plan to fight terrorists—but poorly executed, it will put your privacy at risk.

The federal Department of Homeland Security spent the past six months testing biometric passport prototypes and wants to roll out the new technology as soon as possible.

The passport's chip will store more than just your name. It will store biometric facial recognition scan data—the kind of information that could help a computer recognize you by, for instance, the distance between your eyes. It'll also contain your passport photo in digital form, as well as personal data including your name, birth date and birthplace, gender, and passport number.

Other countries, as well, are adopting passports with electronic data, under a specification developed by the International Civil Aviation Organization (ICAO). The organization has created the spec-

ifications for most of the world's passports for more than 50 years.

U.S. Homeland Security officials say that the new passports go a long way toward preventing people from using another person's passport. The passports also permit touchless data transfer, meaning that a passport agent can collect the data without connecting the passport's chip physically to a computer. The DHS wants all travel documents to have touchless technology by 2006.

Unfortunately, the personal information is stored in unencrypted form. Worse, touchless technology might let someone with the right equipment read your personal information at a distance.

Officials are developing workarounds to prevent so-called skimming, but until they do, I think we should stop using contactless technology. Instead, officials should use smart cards that must be physically connected before they'll divulge their data. We should also encrypt the data included on a passport.

There's still time to change the passport plan. If you're concerned, get in touch with both the ICAO (find.pcworld.com/45582) and the State Department (find.pcworld.com/45584).

—Andrew Brandt

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ON YOUR SIDE

Driver Woes Stop the Music

I PURCHASED a digital copy of Pink Floyd's "The Wall" from MSN Music. When I couldn't burn the music to disc using Windows Media Player 10, I contacted MSN and Microsoft Software Technical Support, but neither could provide a solution. The MSN Music Store license states that the purchaser can burn unlimited copies of the music to CD. Not being able to burn a copy infringes on my rights, and Microsoft has not responded to my requests for a refund.

Brian Kortmeyer, Redlands, California

On Your Side responds: When I contacted Microsoft, the Windows Media Player development team determined that third-party software on Kortmeyer's system had replaced the existing signed driver for his CD drive with an unsigned version. Once this software was uninstalled and the driver updated to the signed version, the burner functioned properly.

Microsoft also issued Kortmeyer a full refund for his music purchase in recognition of the inconvenience.

—Stephanie Layton

reloadable Visa debit card issued by the IKobo company; users can access their cash via participating ATM machines.

Chances are that your online payments will go through without a hitch. But just in case, here are a few tips:

- Look for specific information on error and conflict resolution to learn how the service handles disputes. Review the company's policy on fraud prevention, too.
- Avoid leaving large sums in any money transfer service account.

- Try to limit your use of money transfer services like PayPal to smaller purchases (transactions under \$500 or so). Consider an escrow service for larger purchases.

- When possible, use a credit card for purchases to protect yourself against fraud or unauthorized charges.

- Finally, diversify. If you run an online business, consider using more than one payment service. If you're a buyer, use PayPal or another service when that method makes sense, but don't forget that sometimes even a good old-fashioned paper check may be a better option. ■

Anne Kandra is a contributing editor, Andrew Brandt is a senior associate editor, and Stephanie Layton is an editorial assistant for PC World. You can send them e-mail at consumerwatch@pcworld.com. To read previously published Consumer Watch, Privacy Watch, or On Your Side columns, visit find.pcworld.com/31703, find.pcworld.com/31706, or find.pcworld.com/31709, respectively.

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STEVE BASS

For Safe Backups, Think Outside the Box

External hard drives are now your best choice for fast, reliable data security.

JUST FOR FUN, take a 9-pound hammer to my PC's hard drive. I won't mind a bit because I know a copy of my data is safe on an external hard drive. I'm backed up to the hilt, but you might not be. Here's my faultless, safe, and automatic backup routine—and why I think it'll work so well for you.

I've tried dozens of backup techniques and devices, and for the last year my method's been simple: daily backups using Maxtor's OneTouch II (\$265 online; find.pcworld.com/45370). This 250GB external hard drive links to your PC via USB 1.1, 2.0, or FireWire. It comes with a simple yet powerful version of my favorite backup software, Dantz Retrospect Express. My backups are fast, and I never have to worry about running out of space.

The OneTouch series meets the Bass automation rule: I want the software to *make it happen*—and don't bother me with the details. That's because my procrastination gene kicks into action if I have to spend time swapping CDs, DVDs, tapes, or cartridges. (I'd do anything instead, even—cover your ears, honey—help my wife fold the laundry.)

Even with the automated backup set for 8 p.m., I often want an extra margin of safety, so I press the button on the OneTouch II while, say, proofing this column. In the background, both of my system's internal hard drives are automatically backed up—no fuss, no muss. And more important, no Bass intervention. The software verifies the backup's integrity; and I can restore anything I need, from a single important file to the whole drive.



If you're on a budget, you can get a 120GB Maxtor OneTouch USB for about \$155 (read last May's "The Outsiders: Disks That Do More" by Seán Captain at find.pcworld.com/45372 for more on your external-drive options).

EXTERNAL HAZARDS

EXTERNAL HARD DRIVES protect you from the two biggest threats facing home PC users: a failure of your primary hard drive, and accidental deletion of files (something I have never done, of course).

I have to admit, there are two clear advantages to backing up to a CD or DVD: You don't have to worry about a virus or Trojan horse wiping out your data (a real risk for any hard drive), and you're protected from power surges (another real risk, for any peripheral).

I keep my external drive's data safe by updating my antivirus software daily. And to protect the drive from surges, I plug it

into APC's \$55 Back-UPS ES 500 uninterruptible power supply (find.pcworld.com/45368). If you don't have a UPS, be sure to disconnect the drive's power and data cables between backups, even though it's inconvenient.

Lastly, I built my own external drive for my off-site backup. I just plopped an old 3.5-inch hard drive (it was gathering dust in my garage) into a \$43 hard-drive enclosure from ADS Technologies (find.pcworld.com/45376); other enclosures are as cheap as \$30 (find.pcworld.com/45378).

I removed the enclosure's cover by unscrewing it from the back. Then I attached a flat data cable to the hard drive, keeping

the edge with the red stripe facing the power connection. I put the power plug into its connector (it fits only one way, so don't worry about doing it wrong), set the drive into the enclosure, and secured it with the four screws provided. Then I just slid the cover back on, replaced all the screws, plugged the unit in, and connected the USB cable to the enclosure and then to my PC, and I was good to go. The Dantz software differentiates between the Maxtor drive and my homemade one and syncs them. I keep this second drive with my neighbor Harry, and once a week I retrieve it, update the backup, and return the drive to him. That's reassuring.

Hey, it looks like it's time for me to go hit my backup button. I think I see someone holding a hammer. ■

Contributing Editor Steve Bass is the author of PC Annoyances, published by O'Reilly. Contact him at homeoffice@pcworld.com.

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BUGS & FIXES

STUART J. JOHNSTON

Protect Your Browser From Attack Ads

Get the latest hotfix for IE 6 and plug holes in Java and Skype's VoIP software.

A NEWLY DISCOVERED security flaw in Internet Explorer 6 is being exploited by virus writers to spread a worm via online ads. A UK-based technology news site, The Register, reported that some of its ads had been infected (see find.pcworld.com/45932).

The bug is caused by the way IFrames—the HTML commands for displaying frames on a Web page—are processed in IE 6. When you click the attack program's link, it triggers a buffer overflow error, causing the browser to fail. A clever attacker can then load his or her own program onto your PC and take over your machine. If you don't click the malicious ad, your computer will not be attacked.

Folks using Windows XP Service Pack 2 are not affected by the bug. Prior versions of Windows, however, from 98

through XP Service Pack 1, are vulnerable. You should install Microsoft's patch (at find.pcworld.com/45934) to block potential attacks. The



patch is also a cumulative update for IE, so you will get all the previous patches in this single download.

In addition, Microsoft has released a hotfix for a bug that can cause IE 6 to crash if you are running Windows XP Ser-

vice Pack 2 or Windows XP Tablet PC Edition 2005. The problem will come up only if you try to view a Web page that displays vector graphics and you receive an "access violation in Vgx.dll" error. For more information on this new fix (number 885932) and how to obtain it, go to find.pcworld.com/45940.

JAVA JIVE

BECAUSE of a security hole, some versions of Sun Microsystems' Java plug-ins (small programs that add Java capabilities to apps such as IE) are susceptible to attacks. The flaw affects Windows and Linux OSs, and IE and Firefox browsers (details at find.pcworld.com/45936).

The bug could leave you open to a rogue Java applet hiding in an attacker's Web site. Clicking a poisoned link could let a villain control your PC, steal files, erase data, and upload programs.

Fortunately, the bug doesn't affect all versions of Java: Versions 1.4.2_06, 1.3.1_135.0, and 5.0 (downloadable at find.pcworld.com/45938) are immune. To find out if you have a vulnerable version, go to www.java.com and click the *Download* button. The site then automatically scans your

system; if it finds that you have a buggy version, it will recommend that you download the protected release. ■

Stuart J. Johnston is a contributing editor for PC World. Visit find.pcworld.com/31580 to see more Bugs and Fixes columns.

IN BRIEF

Symbian Parasites

THE TROJAN horse Skulls.B has been combined with the worm Cabir.B to create a double threat to Symbian-based mobile phones, such as some Nokia and Siemens units. Skulls.B claims to be a free theme manager for your phone. But once loaded, it wipes out all apps, so the phone can only make and receive calls. It also displays program icons as generic ones. What's more, Skulls.B drops the Cabir.B worm on your phone. If you click the worm's icon, it will try to infect other phones via Bluetooth—if you have that feature. To disinfect your phone, read F-Secure's instructions at find.pcworld.com/45952.

BUGGED?

FOUND A hardware or software bug? Tell us about it via e-mail at bugs@pcworld.com.

PATCH SKYPE'S VoIP SOFTWARE

INTERNET TELEPHONY company Skype has updated its Voice-over-Internet-Protocol software to plug a security hole that could let an attacker take over your PC. Clicking a malicious link on a Web site may trigger a buffer overflow error, and the error could be exploited to run a bad guy's program on your machine.

Skype's VoIP software for Windows allows users to make free voice calls to each other anywhere via the Internet. Although Skype is compatible with Linux, Mac, and PocketPC operating systems, the bug affects only Skype's Windows version. Download the patched version at find.pcworld.com/45942.

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- Legendary IBM full-size keyboard¹⁰
- Only .94" thin¹¹
- 2.7-lb travel weight¹²
- 1-yr system/battery limited warranty⁸

NavCode 2386A4U-M519

THINK EXPRESS MODEL PRICED AT:

\$1,499*

\$53/mo for 36 months

SuccessLease for Small Business

center. Calls must be received by 5pm local time in order to qualify for Next Business Day service. (10) **Full-size keyboard:** As defined by ISO/IEC 15412. (11) **Thinness:** may vary at certain points on the system. (12) **Travel weight:** includes battery and optional travel bezel instead of standard optical drive in Ultrabay bay, if applicable; weight may vary due to vendor components, manufacturing process and options. (19) **SuccessLease:** SuccessLease program, rates and terms are provided by third-party financiers approved by IBM Global Financing to credit-qualified business customers installing in the U.S. Featured monthly lease payments based on prespecified end-of-lease purchase option; documentation fee and first month's payment due at lease signing; taxes are additional. Options cannot be leased separately. IBM and IBM Global Financing reserve the right to alter product offerings, specifications or financing terms at any time, without notice. **Trademarks:** The following are trademarks or registered trademarks of IBM Corporation: IBM, the IBM logo, Rapid Restore, Rescue and Recovery, ThinkPad, Ultrabay, UltraConnect and UltraNav. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel, Intel Xeon, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Intel SpeedStep and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of other companies. ©2004 IBM Corporation. All rights reserved. Visit www.ibm.com/pc/salecomputing periodically for the latest information on safe and effective computing.

Take a look at some of our latest models. And get state-of-the-art security.



Why IBM ThinkPad Notebooks?

To make IBM ThinkPad® notebooks even more valuable, each one featured here can give you the efficiency, productivity and edge you need and comes with all the following ThinkVantage™ Technologies:

IBM Active Protection System: Butterfingers unite! Select IBM ThinkPad notebooks now include airbag-like technology to help protect your hard drive from some damage caused by drops and jolts.

IBM Rescue and Recovery: Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

IBM Access Connections: Switch between wired and wireless connections.

IBM Embedded Security Subsystem 2.0:¹ Hackers and thieves, beware. Our combined hardware and software solution is designed to protect user data and keep it private.

Access IBM: Get the help you need, when you need it. One button on your ThinkPad notebook brings you a world of resources and assistance.

IBM ThinkPad R51

System Features:

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor 725 (1.60GHz)²
 - Intel® PRO/Wireless Network Connection 802.11b/g³
- Microsoft Windows XP Professional⁴
- 15" XGA TFT display (1024x768)
- 256MB DDR SDRAM⁵
- 40GB hard drive⁶
- Integrated Ethernet and modem
- IBM Ultrabay™ Enhanced CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength
- 1-yr system/battery limited warranty⁸

NavCode 1836Q4U-M519

THINK EXPRESS MODEL
PRICED AT:

\$1,449*

\$52/mo for 36 months
SuccessLease for Small Business¹⁹



IBM ThinkPad T42

System Features:

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor 725 (1.60GHz)
 - Intel® PRO/Wireless Connection 802.11b
- Microsoft Windows XP Professional
- 15" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 256MB DDR SDRAM
- 30GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim DVD-ROM
- IBM UltraConnect Antenna for increased signal strength
- 1-yr system/battery limited warranty⁸

NavCode 2378R7U-M519

THINK EXPRESS MODEL
PRICED AT:

\$1,549

\$55/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade¹²:
3-yr Depot Repair #30L9192 **\$132**

IBM ThinkPad T42

IBM ThinkVantage Technologies:

- Integrated Fingerprint Reader - Your passwords at the tip of your finger.

System Features:

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor 745 (1.80GHz)
 - Intel® PRO/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 15" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 512MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim CD-RW/DVD-ROM combo
- IBM UltraConnect Antenna for increased signal strength
- 3-yr system/1-yr battery limited warranty⁸

NavCode 2379R8U-M519

THINK EXPRESS MODEL
PRICED AT:

\$1,999

\$71/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
4-yr Onsite Repair/Next Business Day
Response #69P9198 **\$299**



IBM ThinkPad X40

System Features:

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor ULV 738 (1.40GHz)
 - Intel® PRO/Wireless Connection 802.11b/g
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- Intel Extreme Graphics 2
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM fullsize keyboard¹⁴
- 7.0-hr Li-Ion battery¹⁵
- 1-yr system/battery limited warranty⁸

NavCode 2386E9U-M519

THINK EXPRESS MODEL
PRICED AT:

\$1,749

\$62/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
3-yr Onsite Repair/9x5/Next Business Day
Response #30L9195 **\$243**

IBM ThinkPad X40 Solution Pack

IBM ThinkVantage Technologies:

- Longest standard battery life of any leading-brand Ultra portable²¹

System Features:

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor ULV 738 (1.40GHz)
 - Intel® PRO/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- 7.5-hr Li-Ion battery
- 3-yr system/1-yr battery limited warranty⁸
- Accessories Included:**
 - ThinkPad X4 UltraBase Dock
 - IBM Ultrabay Slim CD-RW/DVD-ROM combo

NavCode 2382ECU-M519

THINK EXPRESS MODEL
PRICED AT:

\$2,249

\$80/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
5-yr Onsite Repair/9x5/Next Business Day
Response #69P9200 **\$449**



(Monitor not included)

Why IBM ThinkCentre PCs?

Only IBM offers these features to protect your users, connect them, and keep them working. Each ThinkCentre™ desktop featured here can give them the efficiency, productivity and edge they need with the following ThinkVantage Technologies:

Rescue and Recovery: Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

Access IBM: Get the help you need, when you need it. One button on your ThinkCentre desktop brings you a world of IBM resources and assistance.

IBM ThinkCentre A50 Tower form factor

System Features:

- Intel® Pentium® 4 Processor with HT Technology 3GHz
- Microsoft Windows XP Professional
- Intel® Extreme Graphics 2
- 256MB DDR PC3200⁵
- 40GB hard drive • CD-ROM
- 6 USB 2.0 Ports (2 on front)
- IBM Preferred Pro Keyboard
- IBM USB Optical Wheel Mouse
- Integrated SoundMAX Cadenza
- Integrated 10/100 Ethernet
- Norton AntiVirus™ with 90 days of virus definition updates
- Lotus® SmartSuite® Millennium license
- 1-yr parts limited warranty with 1-yr limited onsite service¹⁷

NavCode 814821U-M519

THINK EXPRESS MODEL
PRICED AT:

\$649

\$23/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
2-yr Onsite Repair/9x5/Next Business
Day Response #54P1859 **\$75**

NavCode® Get the latest pricing and information fast. Use NavCode on the phone or on the Web.

***Availability:** All offers subject to availability. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM is not responsible for photographic or typographic errors. ***Pricing:** does not include tax or shipping and is subject to change without notice. Reseller prices may vary. **Warranty:** For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC 27709, Attn: Dept JDJA/B203. IBM makes no representation or warranty regarding third-party products or services. **Footnotes: (1) Embedded Security Subsystem:** requires software download. **(2) Mobile Processors:** Power management reduces processor speed when in battery mode. **(3) Wireless 11a, 11b and 11g:** based on IEEE 802.11a, 802.11b and 802.11g, respectively. An adapter with 11a/b, 11b/g or 11a/b/g can communicate on either or any of these listed formats respectively; the actual connection will be based on the access point to which it connects. **(4) Included software:** may differ from its retail version (if available) and may not include user manuals or all program functionality. License agreements may apply. **(5) Memory:** For PCs without a separate video card, memory supports both system and video. Accessible system memory is up to 64MB less than the amount stated, depending on video mode. **(6) Hard drive:** GB = billion bytes. Accessible capacity is less; up to 4GB is service partition. **(8) Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges. **(12) ServicePac services:** are available for machines normally used for business, professional or trade purposes, rather than personal, family or household purposes. Service period begins with the equipment date of purchase. Service levels are response-time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. Calls must be received by 5pm local time in order to qualify for Next Business

IBM recommends Microsoft® Windows® XP Professional.



(Monitor not included)

IBM ThinkCentre A50 Ultra small form factor

System Features:

- Intel® Pentium® 4 Processor with HT Technology 3GHz
- Microsoft Windows XP Professional
- Intel® Extreme Graphics 2
- Ultra small form factor — 74% smaller than a standard IBM desktop¹⁶
- 256MB DDR PC3200
- 40GB hard drive • CD-ROM
- Gigabit-Ethernet Integrated
- Norton AntiVirus with 90 days of virus definition updates
- Lotus SmartSuite Millennium license
- 1-yr limited warranty with 1-yr limited onsite service¹⁷

NavCode 809021U-M519

THINK EXPRESS MODEL
PRICED AT:

\$829

\$30/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
3-yr Onsite/9x5/Next Business Day
Response #54P1861 **\$132**

IBM ThinkCentre A51p Tower form factor (model not shown)

System Features:

- Intel® Pentium® 4 Processor 530 with HT Technology
 - Processor speed 3GHz
 - 800MHz FSB
- Microsoft Windows XP Professional
- Intel® Graphics Media Accelerator 9000
- 256MB DDR2 PC2-3200
- 40GB hard drive • CD-RW
- Gigabit Ethernet-integrated
- IBM Embedded Security Subsystem 2.0
- 1-yr limited warranty with 1-yr limited onsite service¹⁷

NavCode 842721U-M519

THINK EXPRESS MODEL
PRICED AT:

\$799

\$29/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
3-yr Onsite/9x5/4-hr Response
#54P1862 **\$239**



IBM eServer BladeCenter

System Features:

- Flexible - full performance and manageability of traditional rack optimized platforms
- Infrastructure integration - help lower TCO and increase control
- Simplify - easy to deploy, easy to install, easy to manage

HS20

- Intel® Xeon™ 2.80GHz/533Mhz FSB
- 40GB IDE/2GB DDR2 PC2100
- 3-year limited warranty

NavCode 8832LEX-M519

EXPRESS MODEL PRICED AT:

\$2,589

BladeCenter Chassis

- 7U rack mount chassis—up to 14 blades per chassis
- 2000W power
- Cisco Ethernet switch module

NavCode 86773EU-M519

EXPRESS MODEL PRICED AT:

\$7,289

\$258/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
3-yr Onsite/9x5/4-hr Response
HS20 #69P9517 **\$279**
BladeCenter Chassis 41L2736 **\$600**

IBM eServer xSeries 336

System Features:

- Leading performance with Intel's EM64T technology - 32 and 64bit simultaneous computing
- High Availability with redundant power and hot swap fans - Calibrated Vectored Cooling enables density and performance
- Simple Management with on board service processors and optional remote management support - take control of your server environment
- Intel Xeon 2.80GHz/800Mhz FSB
- Two 73GB SCSI/2GB DDR2 PC3200

NavCode 88370EU-M519

EXPRESS MODEL
PRICED AT:

\$3,349

\$119/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
4-yr Onsite/9x5/4-hr Response
#69P9243 **\$609**



The IBM Infoprint® 1412

System Features:

- Enhance your system with Monochrome Laser/200 MHz processor
- Speed: Print up to 27 pages-per-minute (ppm)²⁰
- First page-out time as fast as 8 seconds²⁰
- Print quality: up to 2400 image quality
- 32MB of memory
- Parallel and USB attachment and 10/100 Base TX Fast Ethernet interfaces
- 1-yr limited warranty¹⁷

NavCode 75P5759-M519

PRICED AT

\$429

NavCode 75P5760-M519

\$519

250 Sheet Tray #75P6112 **\$92**

ServicePac Service Upgrade:
1-yr Onsite/9x5/Next Business Day
Response #29R5518 **\$47**

IBM Infoprint Express Offering:

Easy to buy. Easy to deploy. Priced right.

Special Edition Infoprint® 1422

System Features:

- Monochrome Laser/366 MHz processor
- Speed: Print up to 32 pages-per-minute (ppm)²⁰
- First page-out time as fast as 9 seconds²⁰
- Print quality: up to 2400 image quality
- 64MB of memory
- Parallel and USB attachment and 10/100 Base TX Fast Ethernet interfaces
- 250-sheet drawer and 100-sheet auxiliary tray
- 1-yr limited warranty¹⁷

Includes:

- Duplex Capability
- Extra 250-sheet drawer

NavCode 75P6795-M519

PRICED AT:

\$879

\$32/mo for 36 months
SuccessLease for Small Business



MOBILE TECHNOLOGY

IBM Think Express Program:

We've configured and priced many of our products specifically for small and medium businesses. And best of all they're available direct from IBM or through select IBM Business Partners.

IBM ThinkPad Accessories

Beikin Components Universal Notebook Travel Surge Protector
#22P7127 **\$20**

Targus Wireless Optical Mini Mouse
#22P7438 **\$27**

IBM ThinkPad Carrying Case - Expandable
#73P3597 **\$59**

ThinkPad 72W AC Power Adapter
#22P9010 **\$99**

ThinkPad Port Replicator
#74P6733 **\$179**

IBM ThinkCentre Accessories

IBM UPS 500
#33L1177 **\$99**

IBM ThinkVision™ L170p 17" Flat Panel Monitor with system package
#W9SPHB0 **\$449**

IBM Server Accessories

IBM S2 42U Standard Rack System
#93074SX **\$1,489**

IBM Rackmount XHV 10K
#21308RX **\$5,399**



1 866 426-5691 | **ibm.com/shop/m519**

Day Service. (14) Full-size keyboard: As defined by ISO/IEC 15412. (15) Battery: These model numbers achieved the Ziff Davis Media, Inc.'s Business Winstone® 2002 BatteryMark™ Version 1.0 Battery Rundown Time of at least the time shown. This test was performed without independent verification by the VeriTest testing division of Lionbridge Technologies, Inc. ("VeriTest") or Ziff Davis Media, Inc.; neither Ziff Davis Media, Inc., nor VeriTest makes any representations or warranties as to these test results. Winstone is a registered trademark and BatteryMark is a trademark of Ziff Davis Publishing Holdings, Inc., in the U.S. and other countries. A description of the environment under which the test was performed is available at ibm.com/pc/www/thinkpad/batterylife. Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning and other customer preferences. (16) Size claims: are based on a comparison of chassis volume to the volume of IBM's standard desktop chassis. (17) Systems with limited onsite service: are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by IBM. IBM will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by IBM for onsite replacement. For a list of onsite replaceable parts, contact IBM. Support unrelated to a warranty issue may be subject to additional charges. (18) Certain IBM logo products: are not manufactured, warranted or supported by IBM; IBM logos and trademarks used under license. Contact IBM for details. (19) SuccessLease: SuccessLease program, rates and terms are provided by third-party financiers approved by IBM Global Financing to credit-qualified business customers installing in the U.S. Featured monthly lease payments based on prespecified end-of-lease purchase option; documentation fee and first month's payment due at lease signing; taxes are additional. Options cannot be leased separately. IBM and IBM Global Financing reserve the right to alter product offerings, specifications or financing terms at any time, without notice. (20) Print speed: Exact speed varies depending on document complexity, system configuration, software application, driver and printer state. (21) Battery Life: Based on manufacturer's published figures or CNET.com results for the top 5 vendors in first quarter 2004 notebook sales as reported by IDC. Trademarks: The following are trademarks or registered trademarks of IBM Corporation: IBM, the IBM logo, ImageUltra, Lotus, NavCode, Rapid Restore, Rescue and Recovery, SmartSuite, ThinkCentre, ThinkPad, ThinkVantage, ThinkVision, UltraConnect, UltraBase, Ultrabay and UltraNav. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel, Intel Xeon, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Intel SpeedStep and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of other companies. © 2004 IBM Corporation. All rights reserved.

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NEW PRODUCTS

EDITED BY TOM MAINELLI

Internet Security Suites Face Off

These products promise to protect you from more than just viruses. We see how they stack up.

SECURITY

THE PERILS OF PC use have changed significantly since the term *computer virus* was coined in 1983. Today's threats range beyond simple viruses to Internet-born worms, Trojan horses, and spyware.

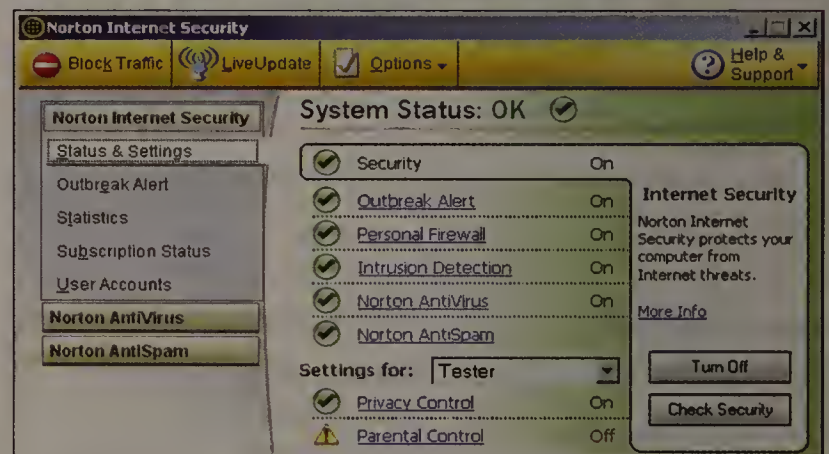
I tested three of the latest Internet security suites—from McAfee, Symantec, and Trend Micro—to see whether their latest enhancements offer the necessary level of protection against today's threats.

TRENDSETTER

TREND MICRO'S \$50 **PC-cillin Internet Security 2005** continues to impress, building on

the solid antivirus, firewall, and spam protection of its predecessor (which earned a *PC World* Best Buy award in June 2004). The 2005 edition offers a slew of new features, including Wi-Fi intrusion detection, protection for multiple PCs on a home network, vulnerability assessment that lets you know whether your system lacks an important security patch, and an anti-phishing component.

The suite's port-based firewall automatically blocks unsolicited inbound attempts, and detects and blocks both inbound and outbound malicious traffic. The firewall *stealthed* (rendered invisible)



SYMANTEC'S NORTON INTERNET SECURITY 2005 offers faster scan speeds and better overall performance than earlier versions.

all of our computer ports, ensuring that we were virtually undetectable on the Internet.

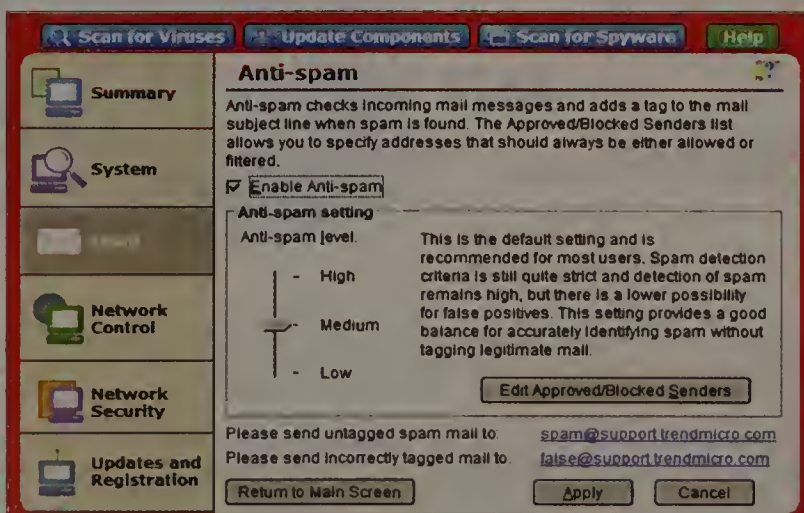
Unlike viruses, spyware often installs itself directly via the Windows Registry; ferreting out its offending keys and values requires a content scan of the Registry. All three of the suites claim to fight spyware, but in our tests only Trend Micro's suite spotted spyware infections in the Registry.

SYMANTEC STEPS UP

SYMANTEC HAS IMPROVED its \$70 **Norton Internet Security 2005** with better overall performance, and a faster scan speed in particular. The suite pumps up protection against

Internet threats—blocking inbound traffic on ports associated with certain worms—and also allows you to specify a list of trusted sites to better manage privacy controls.

Like the other firewalls in the suites we tested, Norton's successfully stealthed our PC ports. The suite adds permission-based features to its firewall, as does the McAfee suite. However, both products also automatically assign "allow" permissions to every already-running Windows service—including Windows Messenger, which some companies exploit as a way to serve annoying pop-up advertising directly to the user's desktop.



TREND MICRO'S PC-CILLIN INTERNET Security 2005 offers numerous customizable settings and flexible installation options.

50 SECURITY SOFTWARE

McAfee Internet Security Suite 2005,
Symantec Norton Internet Security
2005, Trend Micro PC-cillin Internet
Security 2005

52 MULTIFUNCTION PRINTER

Canon Color ImageClass MF8170c

PRODUCTIVITY SOFTWARE

ScanSoft PaperPort Professional 10

54 GRAPHICS SOFTWARE

Corel Painter IX

SMART WATCH

Fossil Wrist Net FX3004

54 PEN TABLET

Wacom Intuos 3

56 ACCOUNTING SOFTWARE

Intuit QuickBooks 2005, Best Software
Simply Accounting 2005

58 PORTABLE AUDIO

Apple iPod Photo (40GB)

PORTABLE SPEAKERS

Klipsch ProMedia Ultra 2.0

60 VOICE RECOGNITION

ScanSoft Dragon NaturallySpeaking 8
Preferred

DVD BURNER

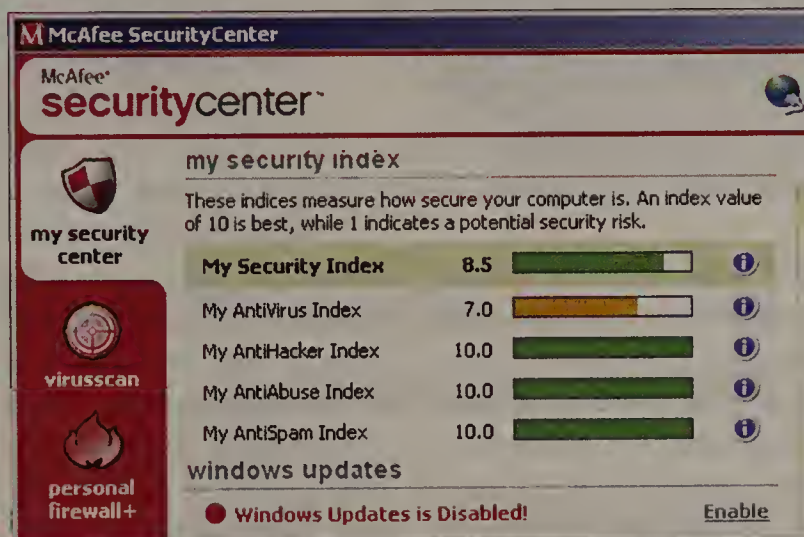
Sony DVDirect VRD-VC10



Norton tosses in additional spam filters, including one for Yahoo Web-based e-mail. But the program lacks some features that you'll find in Trend Micro's package, and the spyware detection is not as good as what's available from Trend Micro. In our tests, Norton failed to detect any of the active infections introduced into the Registry, though it did correctly pinpoint the files we used to infect the system.

McAfee's Web Feel

McAfee's \$70 **Internet Security Suite 2005** boasts a completely redone interface that, though attractive, is somewhat harder to navigate than those of the other products in our comparison. When accessing various menu items through the program interface, I was directed to McAfee.com, which delivered pop-up ads. I activated the pop-up blocker option in the suite, only to be warned that the feature might inhibit



McAfee's Internet Security Suite 2005 has the feel of a Web portal, frequently sending you to the company's Web site.

normal Web site functioning.

McAfee offers a wide array of custom spam filters, including ones that let you filter by language, block intentional misspellings, and adopt many other editable rules. The filters also home in on invisible text and images—techniques that spammers commonly use to thwart content filters.

Like Symantec's offering, the McAfee suite failed to detect the spyware entries in our test

system's Registry. But unlike Norton IS 2005, the McAfee product also overlooked files we used to infect the system.

SP2 SECURITY CENTER

OF THE THREE suites we tested, only **PC-cillin Internet Security 2005** worked seamlessly with the Security Center in Microsoft's Windows XP Service Pack 2. The new Security Center tracks antivirus software and warns the user if it

is not installed or is outdated.

We tested all three suites on a system running XP Service Pack 2, and only when the PC-cillin suite was installed did the Windows Security Center correctly reflect the fact that the product needed updating. With Norton Internet Security 2005 and McAfee Internet Security Suite 2005 installed, the Windows Security Center erroneously reported that the products were up-to-date. (For more about erroneous reporting, see our online report at find.pcworld.com/46292.)

TREND ON TOP

ALL THREE SUITES we tested showed improvements over last year's packages. Full anti-virus testing is beyond the scope of this review (watch for such tests in a future issue), but our hands-on evaluation points to Trend Micro's PC-cillin Internet Security 2005 as the clear winner here. In addition to a full arsenal of easy-to-use tools, the company's latest package sells for a lower price than the competition (though many retailers offer all three suites for less than their list prices), and it comes with free, toll-free phone tech support. In a world of rapidly evolving threats, it's reassuring to have a product like this on your side.

—Mary Landesman

Internet Security Suite 2005

McAfee

★★★★☆

Delivers the basic antivirus and security tools you need, but lacks some tools; the Web portal interface is annoying.

List: \$70 download, \$80 boxed
find.pcworld.com/45918

Norton Internet Security 2005

Symantec

★★★★☆

Better overall performance than in the past and some useful new tools, but it still omits a few important features.

List: \$70 download or boxed
find.pcworld.com/45914

PC-cillin Internet Security 2005

Trend Micro

★★★★☆

Solid protection, many useful security features, excellent Registry scanning, a low price, and free technical support.

List: \$50 download or boxed
find.pcworld.com/45916

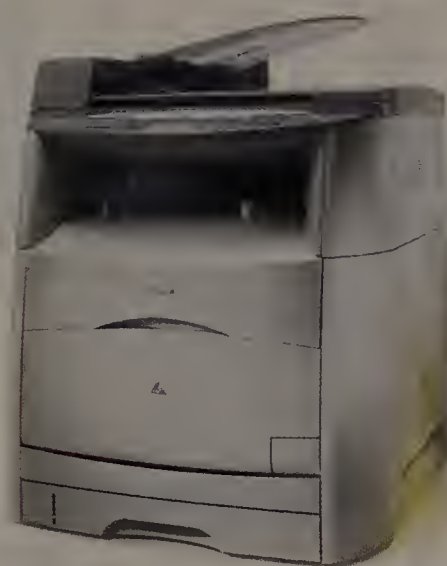
Canon Multifunction Is in a Class by Itself

SMALL-OFFICE PRINTER

COLOR LASER multifunction printers have traditionally been too pricey for home and small-office users. Canon's new **Color ImageClass MF8170c** changes that, offering an all-in-one color laser printer, copier, scanner, and fax machine for a reasonable \$1000. The device has some limitations, though. While output quality is consistent with that of other dedicated color lasers we've reviewed, color print speeds are markedly slower.

The MF8170c prints black-and-white at 600 dots per inch and scans color at 48-bit, 1200-by-2400-dpi resolution.

It printed black-and-white type clearly at sizes down to 3 points. Color images printed



CANON'S IMAGECLASS MF8170c offers quality output but slow speeds.

with good sharpness and saturation, and color business graphics came out nice and bright. Black-and-white scans of text had a few artifacts, however, and color scans were less sharp than those we've seen

from our \$199 Epson CX6600 reference inkjet multifunction printer.

Our biggest gripe concerns color print speeds. The MF8170c performed roughly on a par with the less expensive reference Epson MFP. However, when compared with the color print speeds of dedicated color laser printers, its speeds were often noticeably slower. The Canon printed our Photoshop JPEG file in about

50 seconds, whereas the \$999 Konica Minolta Magicolor 5430DL color laser printed it in about 29 seconds.

Conversely, the Canon's black-and-white print speeds were faster than the Minolta's.

The MF8170c printed our three-page Word test document in an average of 31 seconds. By contrast, the 5430DL printed the same document in an average of 66 seconds.

Canon's Color ImageClass MF8170c provides good color output quality at a somewhat slower speed than you would likely get with a comparably priced stand-alone color laser printer. But the device's additional scan, copy, and fax capabilities may make the sacrifice in speed worth accepting.

—Narasu Rebbapragada

Color ImageClass MF8170c

Canon

★★★★☆

Low-cost color-laser MFP provides good output quality and features at the expense of speed. Street: \$1000

find.pcworld.com/45920

A Better PaperPort, Mostly

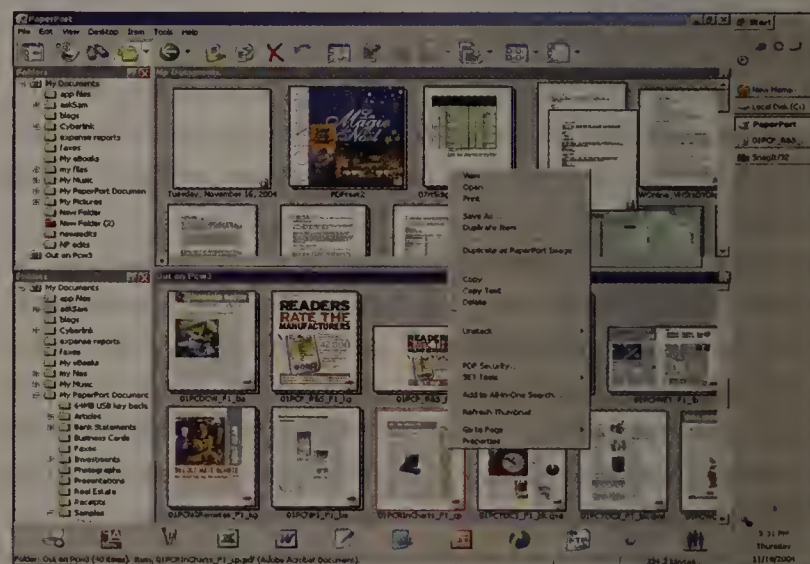
PRODUCTIVITY SOFTWARE

SCANSOFT'S PAPERPORT—when paired with a document scanner—has long provided an elegant means for turning stacks of paperwork into easily organized digital documents. The company's new **PaperPort Professional 10** adds solid features to the mix, but its interface is slightly confusing.

PaperPort functions like a shell over your existing folder structure, allowing you to eas-

ily view thumbnails of documents and images in their native format. The versatile program makes it easy to acquire images from such sources as scanners, multifunction printers, digital cameras, and network drives and devices.

The visual nature of the PaperPort Desktop simplifies the task of organizing documents. PaperPort Workspace, the application's interface, offers various display options and a new split-screen layout. Though I like the idea, I found the options surprisingly confusing to navigate and the interface somewhat cluttered compared with previous versions. The sparse electronic Getting Started guide didn't help clarify the design, either.



PAPERPORT'S NEW SPLIT-SCREEN INTERFACE offers a range of display options, but it can be cluttered and difficult to navigate.

PDF (Portable Document Format) is king in the PaperPort universe. The bundled ScanSoft PDF Create software lets you easily convert files to PDF. And once items are converted to PDF or to PaperPort Image (.max) files, you can do more with documents, such as turn an image into a form

you can fill out electronically.

I've found PaperPort invaluable in the past, and the new version certainly has much to offer. Once I master the new interface, I'm confident that I'll find PaperPort Professional 10 just as handy as I did its predecessors.

—Melissa J. Perenson

PaperPort Professional 10

ScanSoft

★★★★☆

ScanSoft bolsters its offering with convenient PDF creation and full-text searching.

List: \$200

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C7300n
July 2004

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Latest Corel Painter Update Keeps It Real

GRAPHICS SOFTWARE

FOR 13 YEARS NOW, Corel's Painter has been proving that digital art doesn't have to look, well, digital. And **Painter IX** shows that a venerable package can still learn new tricks. I tested a shipping version of this worthy upgrade.

As always, Painter's natural-media art implements, from watercolor brushes to felt-tip pens, produce uncannily realistic results—and the new Artists' Oils are the program's most sophisticated tools yet. You can load up a brush with oil paints that you've mixed yourself and then lay down a

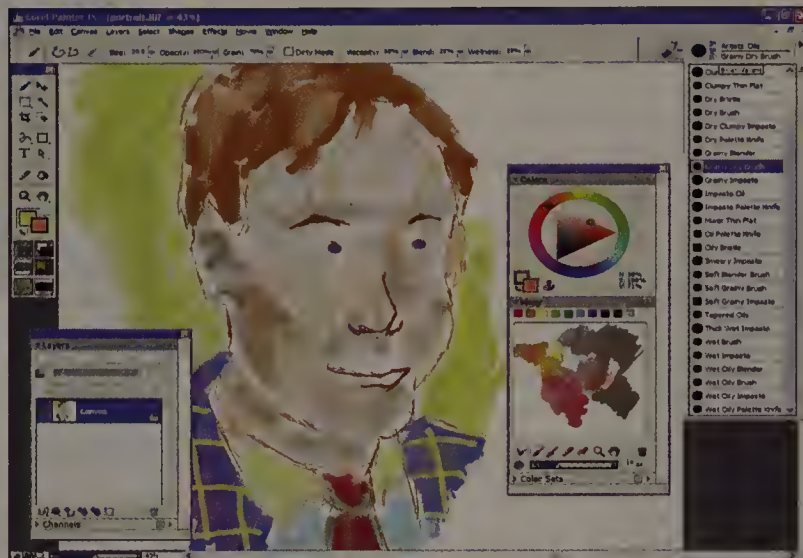
Painter IX

Corel

★★★★★

Corel's classic natural-media paint program gets even more powerful and imaginative.

List: \$429, \$229 upgrade
find.pcworld.com/45924



COREL PAINTER IX LETS YOU watch your digital paint dry.

brushstroke that slowly dries.

Other refinements in this version include watercolors that stay "wet" even when you save a painting and come back to it later. Corel also has enhanced performance by up to 1000 percent, so that working with the virtual art supplies feels even more lifelike.

Mastering Painter still takes time, but Corel made a few smart tweaks. For instance,

cloning, which lets you paint over a photograph, now takes one step instead of five.

At \$429, Painter isn't cheap, and the complete package costs \$130 more than version 8 did. You also need a pen tablet such as Wacom's Intuos 3 to fully explore its potential. If you're a serious artist, this ingenious package is a rewarding investment in your creativity.

—Harry McCracken

QUICK TAKES

A Tablet That Clicks

GRAPHICS PROS will notice a new look to Wacom's Intuos 3 tablet. Gone is the row of function keys that graced previous models; instead, it features four programmable buttons, called ExpressKeys, and a Touch Strip that works like a mouse wheel. The new \$330 6-by-8-inch model (find.pcworld.com/45986) and the \$450 9-by-12-inch unit each have a set of but-



tons on each side, but the \$200 4-by-5-inch model has only one set of buttons, on the left (sorry, southpaws).

—Dennis O'Reilly

Fossil's Smarter Smart Watch

GADGET

A SMART WATCH can tell you more than just the time of day. Fossil's Wrist Net offers news, weather reports, stock quotes, movie times, and messages via Microsoft's MSN Direct service, which uses FM

Wrist Net FX3005

Fossil

★★★★☆

Oversize watch offers improved service and plenty of info, but its need for frequent charges makes it a less-than-ideal travel partner.

List: \$199

find.pcworld.com/45926

radio signals to transmit data.

I looked at a shipping model of the **Fossil Wrist Net FX3005** (software version 1.25), an update of the Fossil Wrist Net we tested last year. Although the \$199 FX3005 is not as bulky as its predecessor, it's still noticeably chunkier than your average timepiece.

The related service has improved. For no additional fee, the watch will display basic news and weather information; for \$40 per year, MSN Direct delivers customizable content such as news, stock info, movie showtimes, and



FOSSIL'S WRIST NET FX3005 is bulkier than most timepieces.

more. The watch face display is 1 inch square, and I found headlines easy to read.

For an additional \$20 per year, MSN Direct will include

Outlook syncing and limited MSN Messenger service. You can receive instant messages from anyone on your MSN Messenger buddy list; alas, you have no way to reply.

The unit's biggest downside continues to be its avid power consumption. With frequent channel switching and back-lighting, it lasted about four days between charges; under less demanding conditions, it ran for about six days.

This Fossil watch improves on the first version, with a smaller form factor, better battery life, and more service options. However, it's clearly still a work in progress.

—Michael S. Lasky

KVMs Perfected!

Control More Computers for Less Money, in Less Space and in Less Time with Tripp Lite KVM Switches

Tripp Lite KVM Switches offer the most economical and convenient solutions available for controlling up to 16 PCs or servers with a single keyboard/video/mouse console. Save money, space and time by eliminating unnecessary consoles, removing cable clutter and avoiding the need to move between multiple consoles.



16-Port 1U Rackmount

- All-in-one console KVM switch includes a keyboard, 15" LCD screen, touchpad and 16-port KVM switch in an easy-glide 1U rack drawer
- Built-in on-screen display gives you control over all ports
- Daisy-chain capability and two-level password security
- 2 models available (one features integrated console KVM switch as shown)

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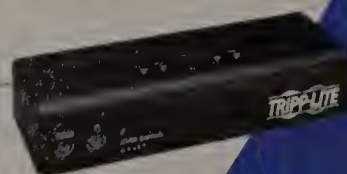
8-Port 1U Rackmount

- Slim 1U cabinet design with daisy-chain capability
- On-screen display gives you control over all ports



4-Port Desktop

- Compact desktop design with individual port selection button
- Notebook and wireless-ready



2-Port Desktop

- Compact desktop design with individual port selection button
- Notebook and wireless-ready
- Includes 2 cable kits



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Intuit, Best Software Offer Improved Accounting Apps

ACCOUNTING SOFTWARE

THE 2005 RELEASES of small-business accounting software from Intuit and Best Software head in different directions. QuickBooks emphasizes ease of use with a Learning Center, chock-full of useful tutorials, featured in all three editions (Basic, Pro, and Premier). Meanwhile, Best's Simply Accounting heads upstream, adding to its lineup a new high-end Premium edition that handles multicompany financial consolidations plus industry-specific features and specialized terminology.

QUICKBOOKS' NEW NAVIGATOR

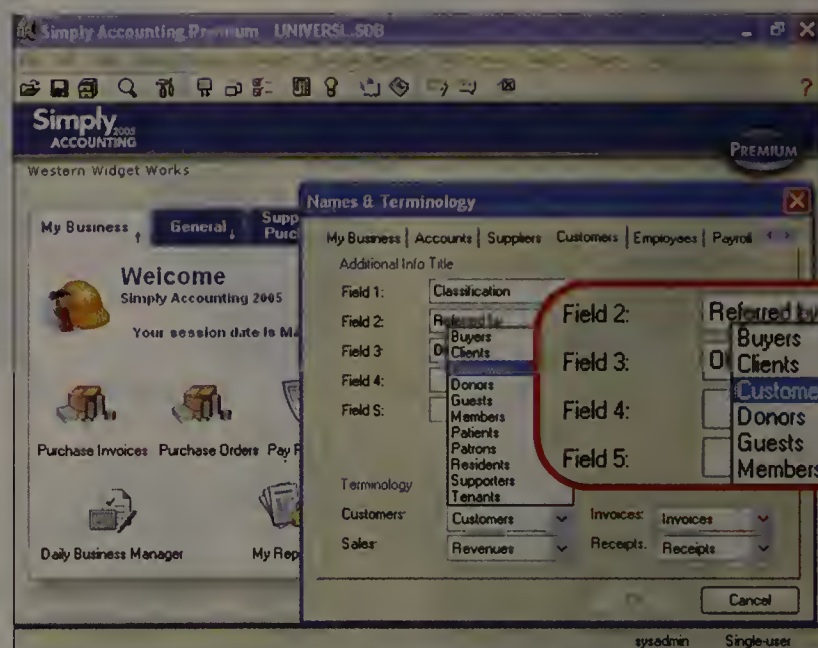
I LOOKED AT SHIPPING versions of all three **QuickBooks 2005** products: the \$200 Basic, \$300 Pro, and \$500 Premier. Among the most noteworthy changes in all three is the redesigned Report Navigator, which continues QuickBooks' ease-of-use theme. The app now groups reports more logically, which makes finding the one you want easier.

The new versions also make it simpler to apply customers' payments to the correct invoice, whether they pay by check or you download their credit card charge information from an online account.

Some improvements are available only in the advanced editions of QuickBooks. In the Pro and Premier editions, you can transfer invoice data to Microsoft Word and add a personal comment, if you wish, before printing out the bill.

This year Intuit includes all of its industry-specific versions of QuickBooks Premier on one CD, which also provides the generic setup. You just select the one you want at installation: accounting, contractor, manufacturer, non-profit, professional services, or retail. The package contains added financial analysis and planning tools, as well.

While all three versions of QuickBooks offer a handful of new features, the most significant improvement is that each is easier to learn to use. Of course, that isn't of much



SIMPLY ACCOUNTING'S NEW Premium edition makes changing accounting terminology easy, such as from Customers to Donors.

benefit to seasoned users, who may not find enough that's new to justify an upgrade.

SIMPLY MORE OPTIONS

BEST SOFTWARE, the maker of Peachtree Accounting, acquired the Simply Accounting product line when it bought ACCPAC International in 2004. Best brings two notable changes to the **Simply Accounting 2005** lineup: a \$500 Premium edition, and a price jump to \$300 for the Pro version (an increase from \$100). Unfortunately, Best also removes the bilingual (English/Spanish) capability from all but the Premium edition.

I tested shipping versions of all three editions. Each one includes a new dashboard feature that calculates key business performance measures, such as estimated available cash and financial ratios.

The good news is that Sim-

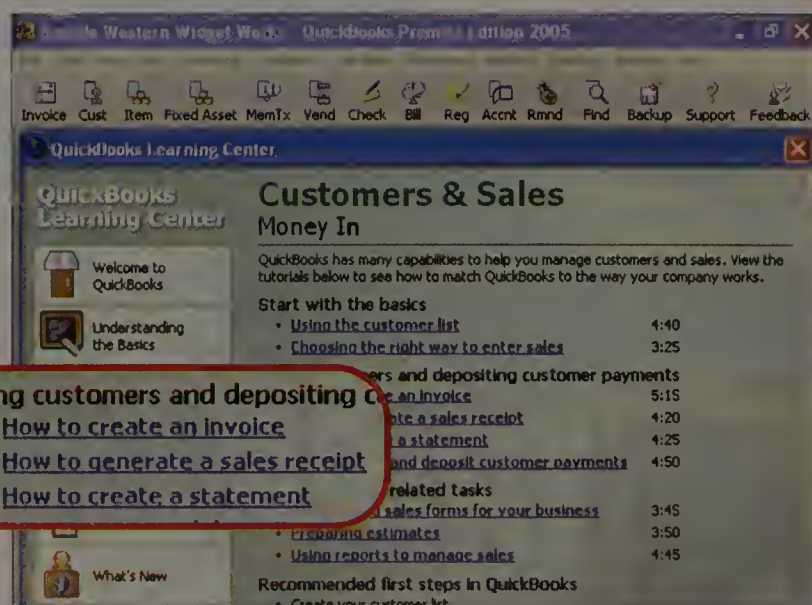
ply Basic still sells for just \$50, a great bargain compared with Intuit's \$200 QuickBooks Basic (and it's half the price of Intuit's Simple Start edition).

One reason to upgrade from Basic to Pro: Pocket PC integration, which allows you to create orders, invoices, and time slips on your handheld.

The all-new Premium edition provides consolidation of multicompany financial results, which is useful for a group of related small businesses. Similar to QuickBooks Premier Edition, Simply Premium provides special reports and terminology to suit different industry types, but in a more flexible manner.

Best's Simply Accounting 2005 lineup deftly maintains its ease of use for newbies yet adds enough headroom to satisfy businesses with more complex requirements.

—Richard Morochove



QUICKBOOKS HAS added a Learning Center offering short tutorials.

QuickBooks 2005

Intuit

★★★★☆

Basic is a bit pricey; entire lineup is now easier to use and continues to offer good business planning tools. List: \$200 Basic, \$300 Pro, \$500 Premier

find.pcworld.com/45B62

Simply Accounting 2005

Best Software

★★★★☆

Basic is an excellent value; Pro and Premium offer more features than Intuit's counterparts. List: \$50 Basic, \$300 Pro, \$500 Premium

find.pcworld.com/45B64

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www.StudioHowTo.com/3



iPod Brings Music to Your Photos

PORTABLE AUDIO

CARRYING AROUND A wallet full of pictures is so last year. Apple's **iPod Photo** makes looking at your most beloved pictures on the go as easy as listening to your favorite tunes. But it won't be cheap.

The iPod Photo comes in two sizes. I tested a shipping 40GB version, which costs \$499—\$100 more than the plain-vanilla 40GB iPod. A 60GB version of the iPod

iPod Photo (40GB)

Apple

★★★★★

Elegant but pricey way to tote around your favorite photos as well as your music.

List: \$499

find.pcworld.com/45802

Photo comes priced at \$599.

This iPod variant is the first in Apple's line of digital audio players to feature a color screen. The 2-inch, 65,000-color display is beautiful and crisp, though a bit small for viewing photos. It can also display tiny versions of album art while music plays.

You load photos the same way that you load music, via iTunes 4.7 software. Scrolling through thumbnails—even hundreds of them—is lightning fast. You can choose to look at a single photo, scroll through photos manually, or start a slide show. The Slide-show Settings menu lets you specify, among other things, the amount of time slides display, as well as a playlist to

aurally accompany the slide show. An included cable gives you the option of plugging the unit into a TV's RCA jacks for big-screen viewing.

In spite of the color screen, Apple managed to improve the unit's battery life. I squeezed nearly 14 hours of listening and viewing pleasure out of one charge (that's up from about 12 hours of run time on current fourth-gen monochrome iPods).

The price may be steep, but the iPod Photo won me over with its gorgeous color screen and high-quality audio. Now instead of suffering through

THE 2-INCH SCREEN on Apple's new iPod Photo looks sharp.

40 minutes on the treadmill staring at the calorie counter, I can pass the time looking at my favorite pictures.

—Cathy Lu

Brilliant, Relatively Portable Sound

SPEAKERS

MOBILE COMPUTING AND portable music are a huge deal these days, and Klipsch is launching a set of speakers as big as the trend. Designed to match up with mobile CD and DVD players, laptops, and iPods and MP3 players, the \$100 **ProMedia Ultra 2.0** system focuses on offering dynamic sound in a portable package.

Of course, "portable" is a relative term. Think of the Ultra

2.0 units as the loaded 17-inch laptops of mobile speakers. You won't want to carry them around all day, but you can take them from place to place easily, and once you set them up, you will have a nearly desktop-quality experience.

I tested a set of preproduction speakers and found them surprisingly light, though a little bulky for your average laptop bag. In fact, the power brick that comes with them is the heaviest part of the package (you can't run them off batteries).

The ProMedia Ultra 2.0

KLIPSCH'S ProMedia Ultra 2.0 speakers are portable, though just barely.

system sounds wonderful. Compared with other portable speakers, the 10-inch-high satellites have superior imaging, crisp and detailed high-to-midrange response, and surprisingly good bass. They faithfully reproduced the airi-

ness of Jeff Buckley's haunting "Hallelujah" and the complex sound effects of DVDs such as *The Fifth Element*.

These speakers can bring the noise too, thanks to 15 watts of power per channel. That's impressive for a portable setup, and even better than some desktop systems. But they aren't magic. Compare them with any decent 2.1 desktop speaker system, and you'll notice the lack of a subwoofer. If you don't need speakers you can carry, spend a bit more and get a good desktop system instead.

If, however, you are assembling the ultimate transportable computing setup, the ProMedia Ultra 2.0 pair may be just the speakers you need.

—Eric Dahl

ProMedia Ultra 2.0

Klipsch

★★★★★

Great-sounding portable speakers, but a bit bulky for light travelers.

List: \$100

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ScanSoft's New Hands-Free Typing App

VOICE RECOGNITION

I'M WRITING THIS article without touching my keyboard. I'm using ScanSoft's **Dragon NaturallySpeaking 8 Preferred** speech recognition software instead. The \$200 app

works well, but tests of a shipping copy found it more adept at some tasks than others.

This was my first time using NaturallySpeaking, and after a brief training period using the included headset microphone,

I started talking. I found the program a fairly impressive dictation tool out of the gate, although it did make mistakes, often on words that sound similar (for example, when I said "a second," the program recognized it as "the Sicilian"). Precision improved after I did additional training (I used the program for about 15 hours total); however, I never experienced the up to 99 percent accuracy promised (my informal tests put it closer to 88 percent).

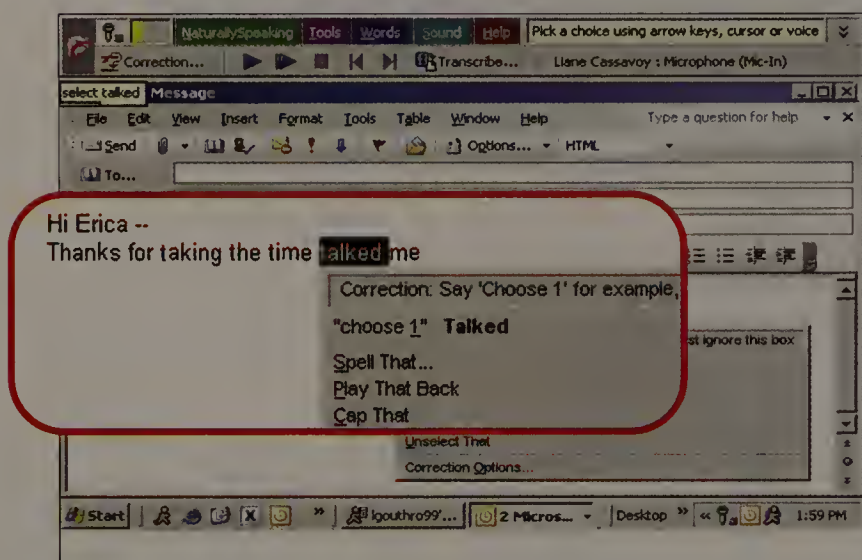
New in version 8 is a feature termed Smart Formatting, which lets you specify how the software formats numbers such as date and currency.

NaturallySpeaking also operates in Command Mode,

which lets you navigate your desktop, open files and folders, and launch applications. While I was able to open some apps easily, others seemed to resist my commands. I found I had to change the names of some of my desktop shortcuts to make the software work.

Despite some flaws, NaturallySpeaking is a good option for persons with physical limitations, as well as for anyone who prefers to dictate documents rather than type them.

—Liane Cassavoy



COMPOSING AN E-MAIL in ScanSoft's new Dragon NaturallySpeaking 8 Preferred takes practice, but the program gets better over time.

Dragon NaturallySpeaking 8 Preferred

ScanSoft

★★★★☆

NaturallySpeaking works well as a dictation tool, but controlling your PC can be a tough task.

List: \$200 (including headset)

find.pcworld.com/45866

Sony Offers Souped-Up DVD Burner

RECORDING

SONY'S \$300 **DVDirect VRD-VC10** is a hybrid product: more than an external DVD burner, yet not quite a set-top DVD recorder. A double-layer, 16X external DVD+R/RW writer, it includes video-capture and MPEG-2 encoding capabilities that let you connect it directly to your digital camcorder or VCR, so you can skip your PC altogether. Unfortunately, Sony left out several features

that could have made the DVDirect more compelling.

I tested a shipping version of the two-tone silver, vertically oriented unit. The device has a five-line LCD status display and nine buttons for selecting functions such as input, stop/start recording, and finalize. The interface is quite intuitive, which is good since the manual is a bit difficult to decipher.

To record without a PC, you plug your digital camcorder or VCR into the DVDirect's rear-mounted S-Video or composite inputs, enable the product's sync function, press Record, and voilà—

hassle-free duplication.

The DVDirect records using the +VR format in three qualities: HQ (1 hour per single-sided disc), SP (2 hours), or SLP (6 hours). It can also record twice those lengths on double-layer DVD+R. My PC-

less transfer tests in HQ and SP produced good results, though the device's lack of a DV input is hard to comprehend. The unit also performed well as a PC-attached burner using its USB 2.0 port. Alas, the quality of sporting events recorded in SLP mode was worse than a VHS tape (a 4-hour mode is badly needed). It's also too bad Sony didn't include video outputs on the unit so that you could use it

as a basic set-top DVD recorder as well.

The DVDirect is a solid external burner that offers good camcorder or tape-to-DVD transfers. However, several missing features make it a bit harder to recommend.

—Jon L. Jacobi

DVDirect VRD-VC10

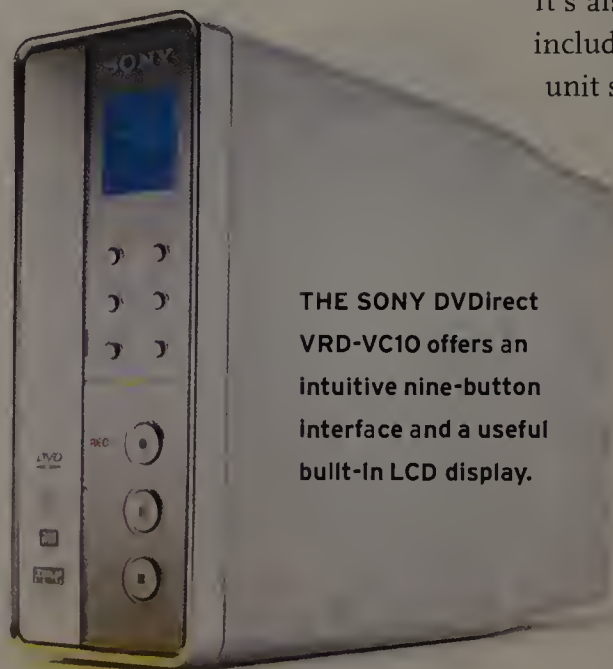
Sony

★★★★☆

Good for basic recording tasks, but lacks a few features that would have made it more appealing.

List: \$300

find.pcworld.com/45872



THE SONY DVDirect VRD-VC10 offers an intuitive nine-button interface and a useful built-in LCD display.



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Security ALERT



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Viruses, spyware, and hackers—oh my!

And they are just some of the many ever-present threats to your computing peace of mind. Fortunately, Best Buy (BestBuy.com®), the world's leading electronics store, has teamed up with Geek Squad Agents to give individuals and businesses the key to safe, secure computing. By establishing precincts at local Best Buy stores, Geek Squad Agents have extended their 24-hour Computer Support Task Force to serve buyers like never before.

Now buyers can avail themselves of the unbeatable combination of Best Buy's most extensive array of superior-quality computer products and Geek Squad Agents who are standing by to help with any security and support questions.

Take viruses, for example. They are one thing we have in common with our computers—we're both vulnerable. Computers, however, suffer from the electronic kind—the kind that can plague a single computer or an entire company by literally destroying your data. And like a human virus, computer viruses can be very easy to catch.

■ Here's what the Geek Squad Agents recommend:

First, make sure you are running anti-virus software on your computer. If you are, check to see if your version has expired. Also, check for new updates to your software on a weekly basis. Symantec is among the industry leaders in anti-virus solutions. Also, Microsoft® routinely makes available new tools that users can download to keep the bad guys out. Whatever solution you choose, always back up your data to some removable media on a regular basis, because you just never know when and how disaster might strike.

■ Common-sense wireless security

Today's computing has gone wireless, and an ever-increasing array of superb wireless hardware devices are available at Best Buy so you can access data and information anytime, anywhere. But when you're communicating over the Internet without wires, you have to make

sure those communications are safe and sound and your files are protected. Special precautions need to be taken to lock down so-called Wi-Fi (wireless fidelity) communications.

By visiting a Geek Squad Precinct at one of the many Best Buy stores, you will learn about the use of network extenders for providing superior distance in wireless communications as well as a stronger and more reliable wireless signal. But don't forget to have wireless encryption or coding enabled. This makes it very difficult for hackers to intrude on your wireless work. For heightened privacy and peace of mind for your wireless communications, set up what is called Wired Equivalent Privacy or WEP encryption, which can be done effortlessly with help from a Geek Squad Agent at your local Best Buy store.

■ Spyware and other pests

For many computer users, pop-ups and spyware (software that secretly tracks your Internet surfing habits and reports that information to advertisers and others) have become public annoyance number one. Not only are they annoying, but these pests can also greatly slow your computer's overall performance and even crash your system or corrupt files. What's worse, you can invite spyware into your computer simply by clicking innocently or even accidentally on a pop-up.

Thankfully, Geek Squad Agents at Best Buy stores have great advice for dealing with these pests. Begin by installing spyware removal and protection software. Some of the more popular and effective solutions include Spysweeper, PestPatrol, SpyBot, and Ad-aware. The great thing about these packages is that they also can help eliminate or at least greatly reduce pop-ups. Geek Squad Agents caution that there is no single software solution that will handle these problems on its own. But they do have an armada of techniques they have learned

over the years to remove these pests and help you get back to enjoying your computer without the unwanted hassles of spyware and pop-ups.



» For more information on Geek Squad Precincts at Best Buy stores, click on BestBuy.com®.

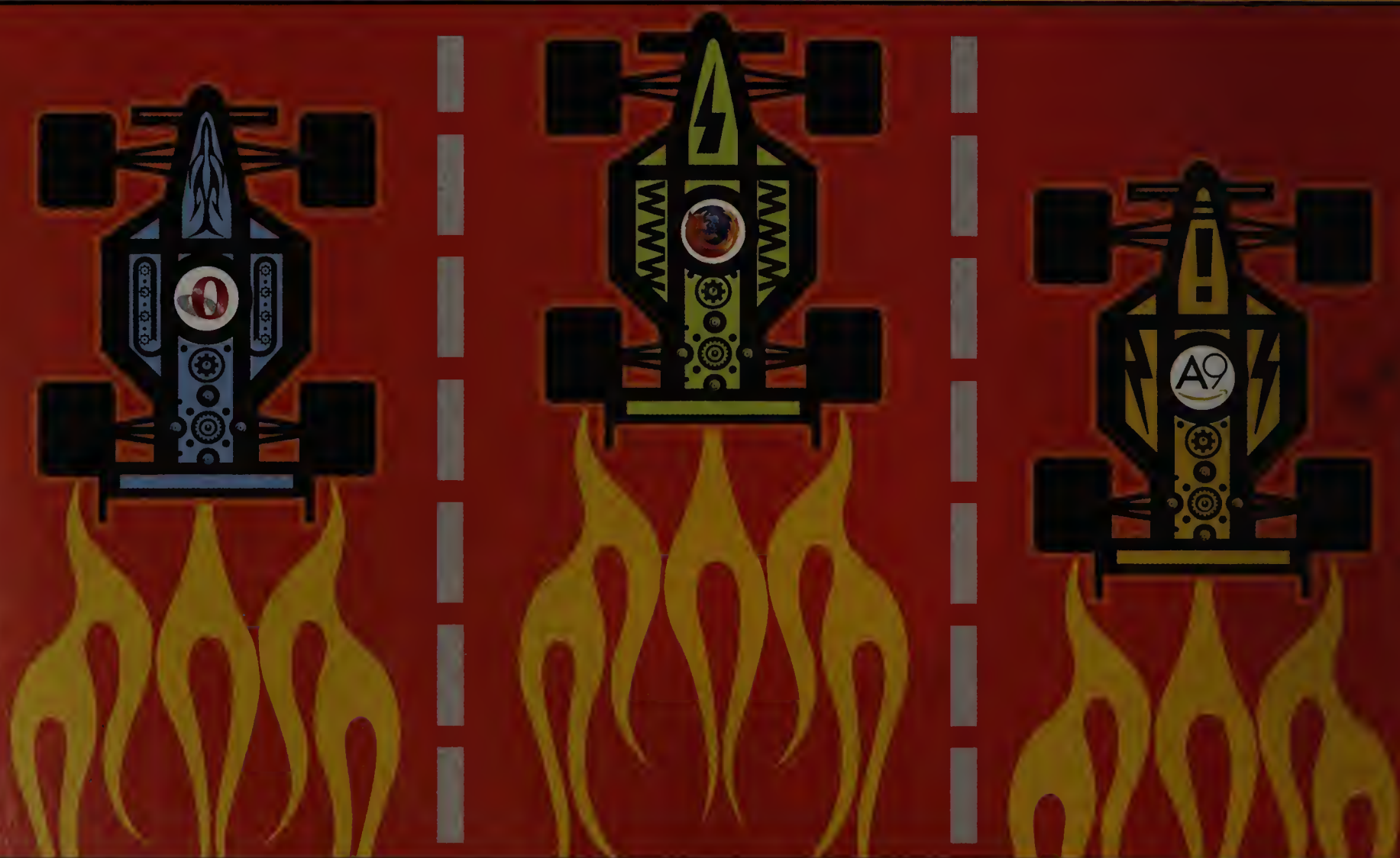


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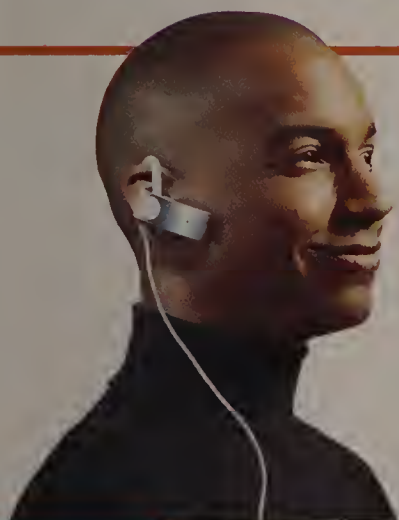


FROM THE EDITORS OF
PCWORLD

Tiny MP3 Players Take On the iPod

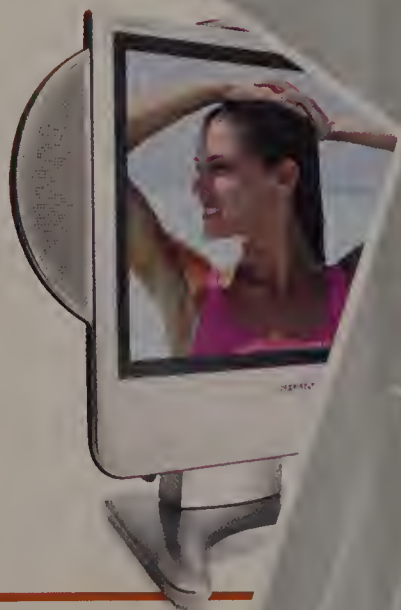
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PLUS: SECRETS OF THE VIDEO GAME PROS

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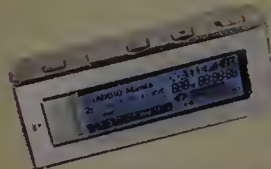


SONY

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JetAudio



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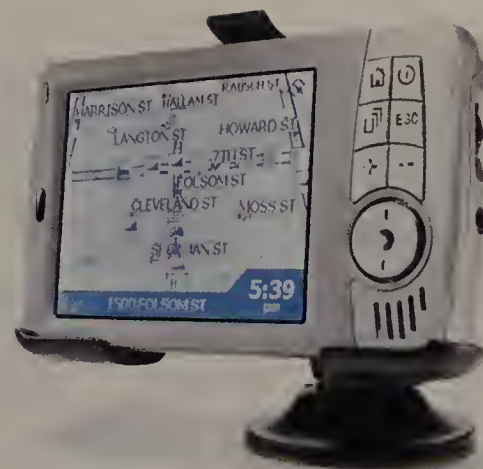
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47



18



13

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Digital World

TECHNOLOGY THAT POWERS YOUR LIFE

FEATURES

NEW STORES | INNOVATIONS AWARDS

20 Innovations 2005

It's been a great year for entertainment technology, with breakthrough products and services in categories ranging from wireless television to programmable robots to camcorders with built-in DVD burners. Here are the 18 recipients of our inaugural Digital World Innovations Awards. Also: Experts in innovation identify their favorite new tech products.

NEW STORES | LCD HDTVS

33 Thin Winners

As competition increases and prices fall, wide-screen, high-definition LCD TVs are poised to take the nation by storm. Our Test Center examined eight new 30- and 32-inch LCD TVs and helped us find the best choices for quality and value.

NEW STORES | PROFESSIONAL GAMERS

41 Gamers Go Pro

"My daughter the first-person shooter champ" may not have the cachet of "my daughter the doctor," but a dedicated PC potato can parlay fast reflexes and quick wits into a lucrative career. Welcome to the competitive gaming subculture.

DEPARTMENTS

8 Editor's Letter

The hazards of driving while digitally diverted.

10 Seen/Heard/Tried

New challengers to the iPod Mini; TiVo with DVD burning; satellite radio; and a pair of high-tech cars for 2005.

18 Descrambler

Seven types of cellular telephone technology—and what's coming next.

47 Gear to Go

On the road or up the trail, you can get juice for your gizmos from a new wave of chargers.

51 Skeptical Shopper

Questions you need to answer before buying a high-definition TV.

52 Bonus Material

Bernie IMac? Xerox Mostel? It's time for a high-tech who's who.

"In his spare time, Fatal1ty promotes competitive gaming by holding 'shoot-outs' in which anyone can challenge him to a duel. Guess who wins."

—GAMERS GO PRO, PAGE 44

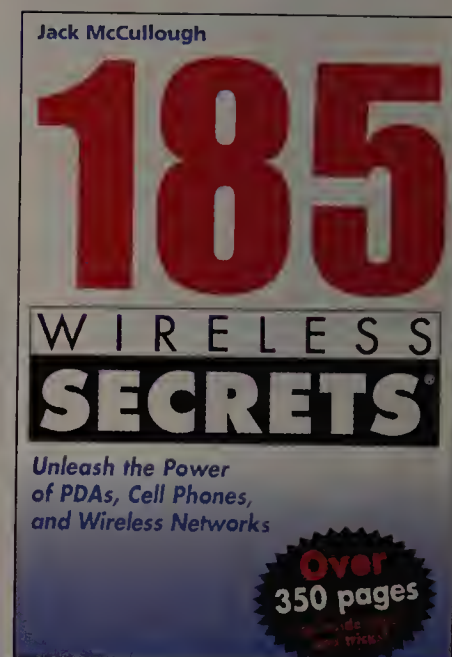
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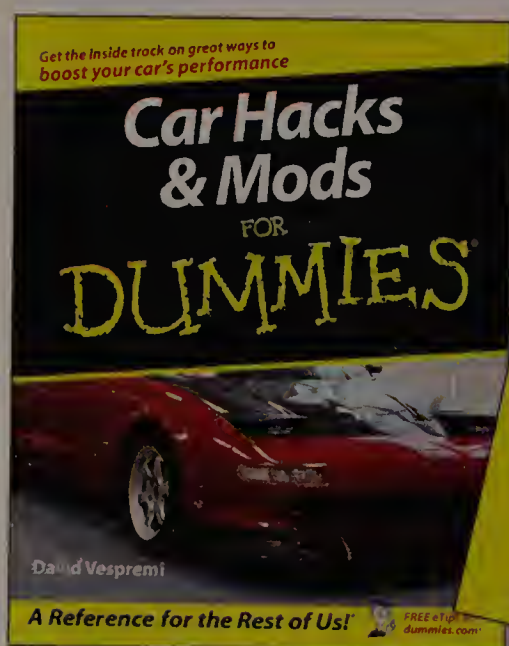


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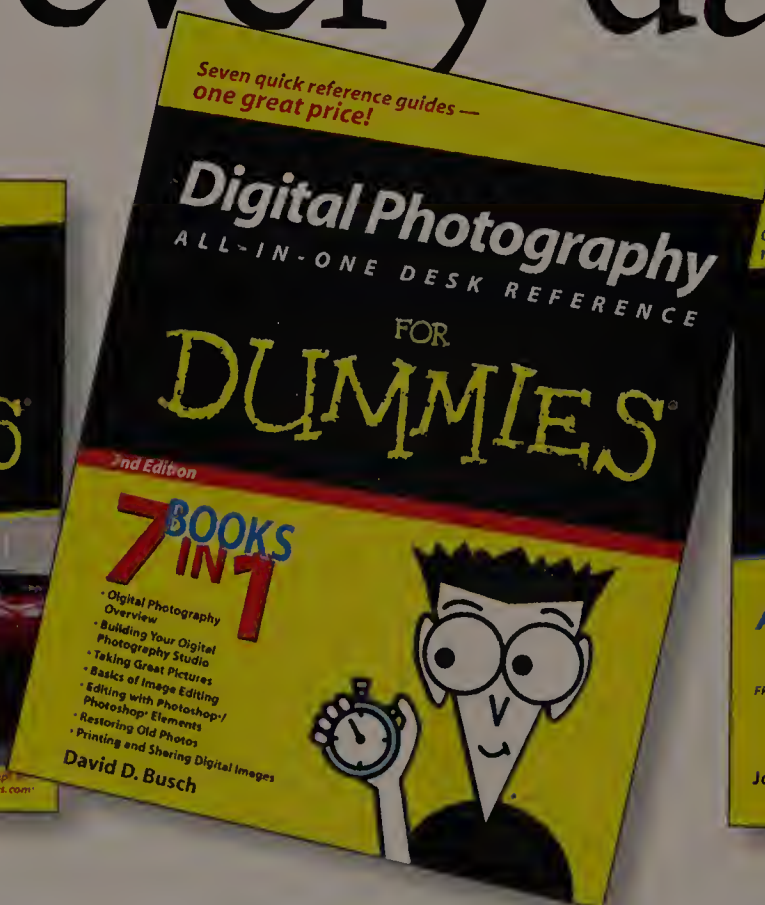


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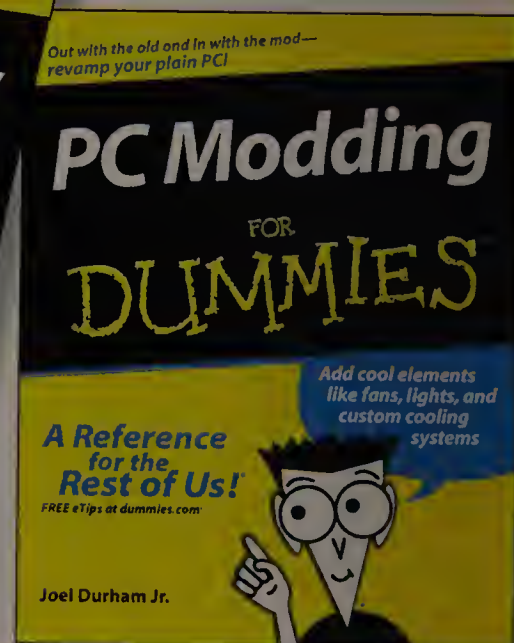
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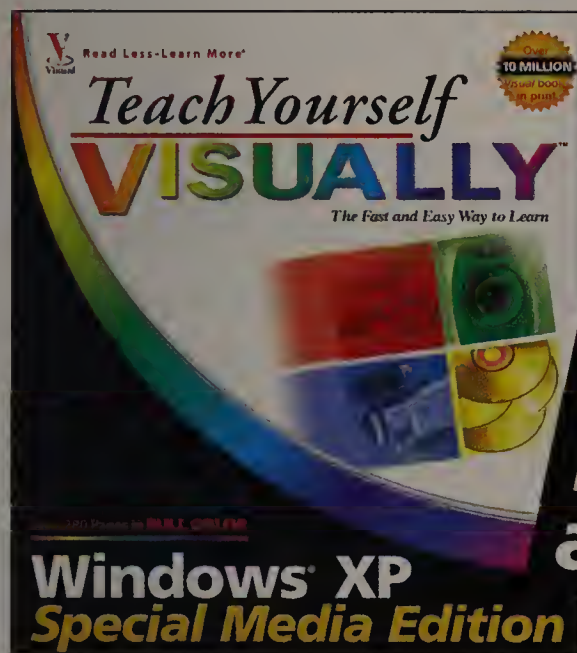
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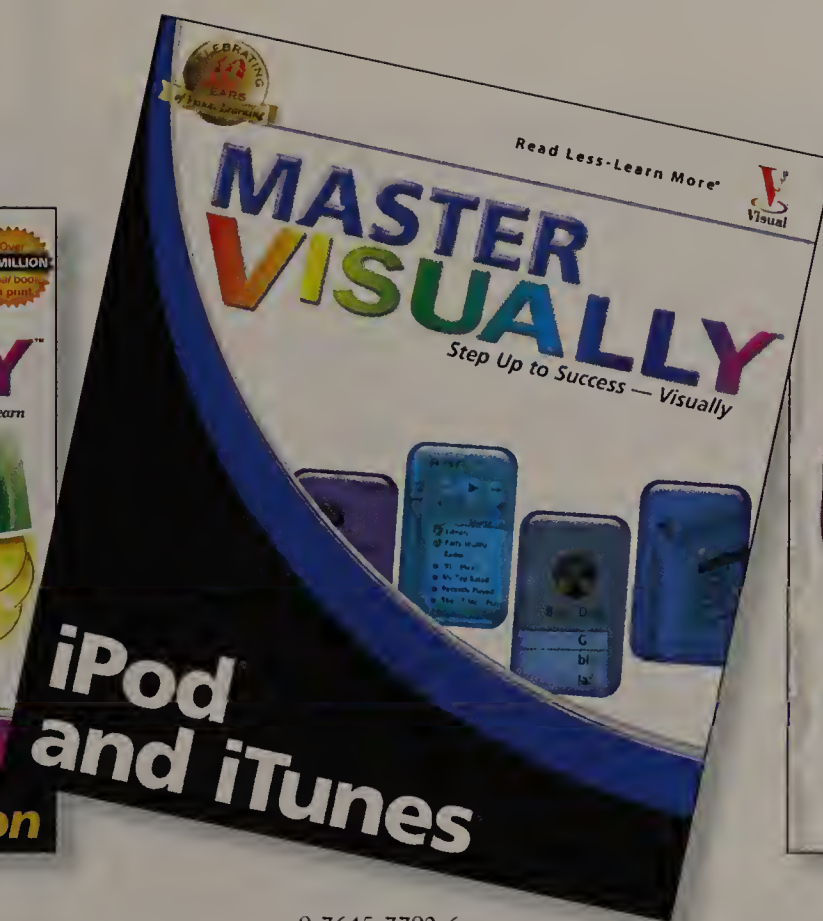
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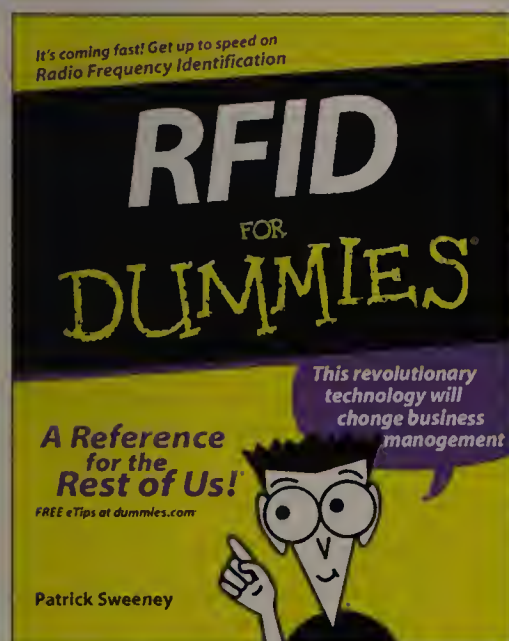


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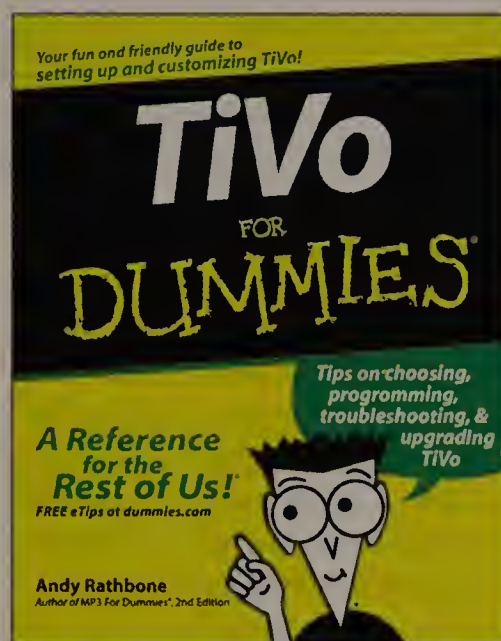


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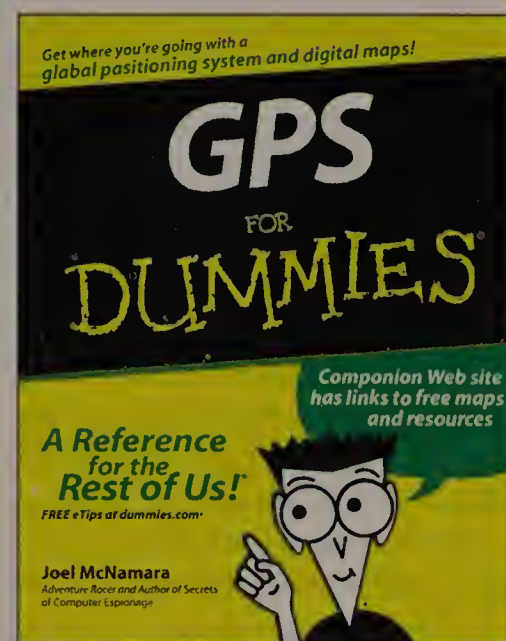
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The High-Techway

Complex cars do everything for you but drive. BY ALAN STAFFORD

FOR OUR STORY on high-tech cars (see *Seen/Heard/Tried*, page 16), I took a 2005 Acura RL for a half-day joyride around San Francisco, and drove a 2005 Audi A6 with a group of auto journalists hammering up Highway 1 along the Marin County coast. Both of them are incredible cars: The Acura's high-resolution audio system and voice-recognition features kept me fully entertained even when the car was parked; and the Audi made me feel like baiting teenagers in Camaros at stop-lights, when I wasn't fiddling with its dynamically seeking radio or discovering touches like a glove box that has an electric release instead of a latch.

I'd love for all of the cars I ever own to be equipped like this, but at the same time I worry that these cool toys are so complicated that they may demand too much of a driver's attention. Is it our God-given right to talk on a cell phone, tune a satellite radio, and consult a navigation system to find out where the heck we're going, all while sitting behind the wheel of a hurtling 2-ton hunk of metal and plastic?

Both cars' audio, climate-control, and navigation systems seem well designed; but they're still complicated, and reading text and deciphering icons on the LCD screen took a lot of time. If I owned one of these vehicles, I'd probably get better at using the components, but it's up to the manufacturers to design devices so that drivers can operate them and still keep their eyes on the road. Of course, not all distractions are visual: You don't have to look away to use a cell phone, but three states have outlawed using one while driving because it can be so dangerous.

Some drivers should never be allowed



BEHIND THE WHEEL—and the stereo—of a 2005 Acura RL sedan.

access to toys like these. It's illegal virtually everywhere to watch a video while driving, but certain people have modified their in-dash DVD players so they can do just that. An Alaska man was accused of causing a fatal head-on collision because he was watching a movie on his in-dash DVD player (dwfind.com/45780). In August, he was acquitted of a charge of second-degree murder. But rigging a DVD player so that it even becomes possible to watch it while driving constitutes premeditated, first-degree stupidity.

It goes without saying that skillful, intelligent, considerate drivers like you and me can probably manage to operate highly evolved vehicles without running over pedestrians and errant barnyard animals. As for those drivers who can't, I encourage them to take a high-tech bus. ■

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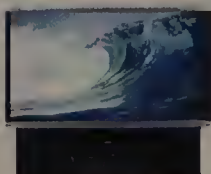
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Seen / Heard / Tried

iPod Mini Killers Arrive

FOR EVERY NEW digital audio player that comes along, an inevitable question arises: Is it better than Apple's iPod? Three 5GB contenders take aim at the iPod Mini. Could one of these players loosen the Mini's market stranglehold?

DELL OF A DEVICE

PUT A SILVER iPod Mini beside Dell's **Pocket DJ**, and except for the buttons, you

would have an easier time telling the Olsen twins apart (pre-hair-dye job). The Dell features nearly the same dimensions and polished metal case as its rival. Switch it on, and the Now Playing screen displays the same font and layout as on the Mini.

Fortunately, the one area where Dell chose not to imitate Apple was in the pricing of its player. At \$199, the Pocket DJ packs a full extra gigabyte of storage space for \$50 less than the Mini. Dell also includes the most intuitive music management program I've used—Musicmatch 9—and the DJ's use of a scroll dial as its primary control (similar to the scroll wheel on a mouse) allows for speedy, simple navigation. The dedicated Home and Back buttons also come in handy.

Gym rats will wish the Dell came with an armband. In addition, it has no FM tuner or recording capabilities. Despite those drawbacks, though,

GOVIDEO'S 5GB entry disappoints for now.



VIRGIN'S 5GB player serves up a little humor with your music.

Dell's Pocket DJ is a fine digital music player that makes a whole lot of fiscal sense.

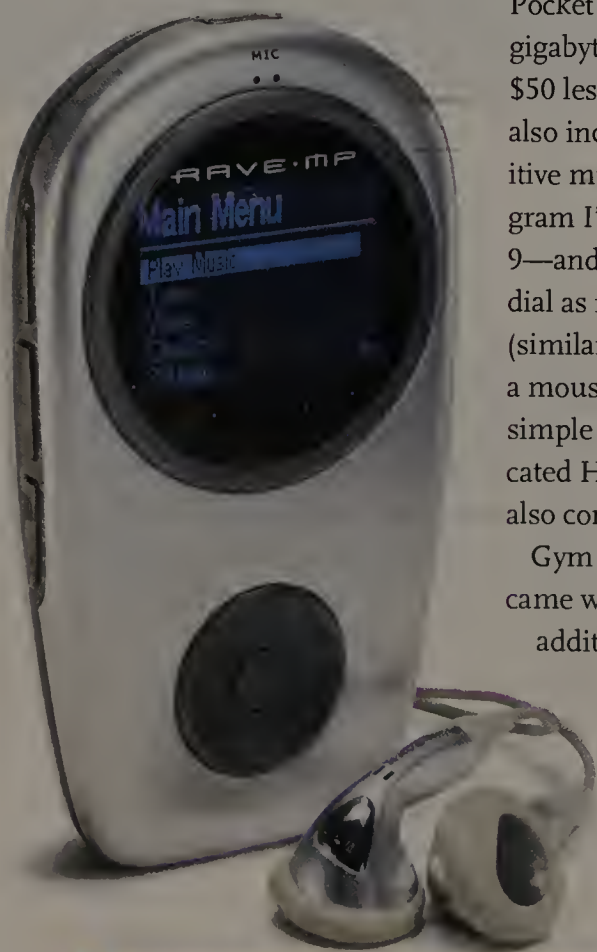
GOVIDEO IS NO GO

GOVIDEO's new MP3 player, the **Rave-MP ARC 5**, looks like a winner. Light, compact, and with a comfortable armband, the \$250 ARC has the ergonomics down pat. The FM tuner gets good reception and good battery life, and you can record voice notes.

But the preproduction ARC I tested has hard-to-ignore weaknesses. The player turns on slowly—I found myself hit-

ting the On button repeatedly and checking the lock switch, just to make sure I'd actually turned it on. Also, browsing for a new song interrupts playback of the current track. This violates my cardinal rule for any digital audio player: To quote Steve Miller, "Keep on a-rockin' me, baby."

But the biggest problem with the ARC is poor sound quality. The distortion I heard even at midrange volume got unbearable at the higher volumes required on a loud bus or a treadmill. Better headphones did not fix the prob-



LEAST POPULAR IPOD MINI COLOR: **GOLD**

—BASED ON OCTOBER
2004 AMAZON.COM SALES



THE REASONS BEHIND THE RATINGS The Test Center logo indicates lab-tested products; our five-point star rating system reduces an evaluation to a single overall assessment.

★★★★★
Practically
perfect

★★★★☆
Pretty darn
good

★★★☆☆
Okay, but
just okay

★★☆☆☆
Not so hot

★☆☆☆☆
Just plain
awful



The DW Choice award indicates our pick of the best product in a comparative review, regardless of price, based on multiple evaluative criteria.



The DW Value award honors a product in a comparative review that we deem an excellent value for the price. When price is an object, look for this logo.

lem. At press time GoVideo said it was planning to release a firmware update to address the issue. Look for an update and a final product rating at www.digital-world.com.

FLYING VIRGIN FIRST CLASS

JUST THINK of the \$249 **Virgin Player 5GB** as the Monty Python of digital audio devices. Turn it on for the first time, and it demonstrates basic controls with cheeky British humor. Play the Name That Tune quiz, and the player cheers correct answers with comments like "Brilliant!" and "Friggin' awesome!"

Controls (including Home and Back buttons) are intuitive, and the unit has 21 differ-

ent equalizer settings, dual headphone jacks so you can share music with a friend, and an FM radio with good reception. Plus, the Virgin DJ feature spins songs based on an assortment of DJ themes—listen only to tracks you just loaded, forgotten tunes unplayed for ages, and so on.

Currently, the player works only with Windows Media

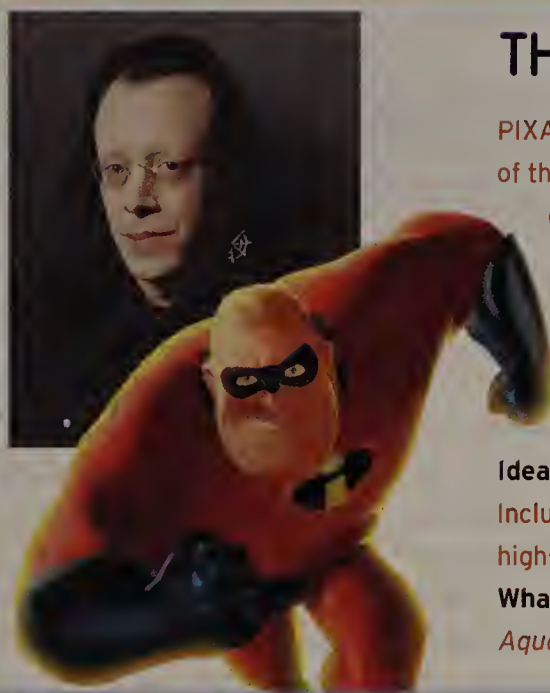
Player 10. Virgin says that it has plans to provide its own music management software.

Drawbacks include small buttons, short (8-hour) battery life, no armband, and the inability to create playlists on the device. But personality, FM radio, and details that music lovers care about make this player just plain awesome.

If you're a coupon-clipping

music lover, the Dell will not disappoint. If having a radio is important to you, the Virgin is a great option for a little more money than the Dell. Don't get me wrong, I still like the iPod Mini. But the introduction of these players means that the Mini isn't the only game in town anymore.

—Sam Jemielity



THAT'S INCREDIBLE

PIXAR'S SUPERVISING technical director Rick Sayre is one of the brains behind the making of *The Incredibles*, the studio's animated flick about a retired superhero who returns to action to save the world.

Superhero hardware: 2000 mostly RackSaver (now Verari Systems) and IBM BladeCenter servers.

Animation challenge: Humans. "Their proportions are comic-book-y, but they need to read as real people."

Ideal place to see a movie: Pixar's in-house screening room. Included in the room is a 2K DLP projector, which throws a high-resolution, 75-foot-wide image.

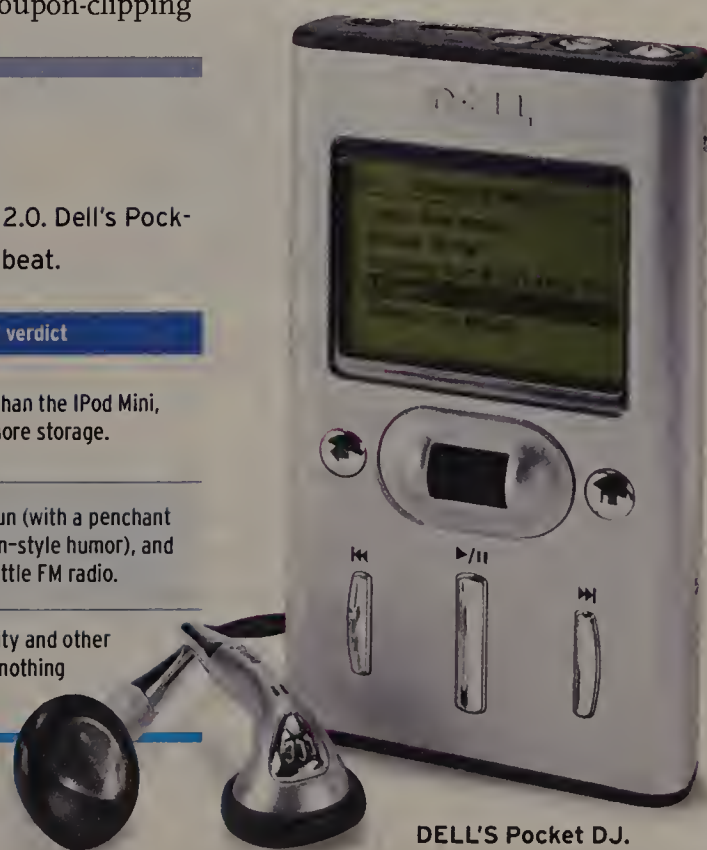
What Sayre watches on TV: "I don't watch TV except for *Aqua Teen Hunger Force*." —Narasu Rebbapragada

MP3 JUKEBOX HEROES

ALL OF THESE PLAYERS hold 5GB of digital audio and connect to your PC via USB 2.0. Dell's Pocket DJ edges out the Virgin Player 5GB for our DW Choice Award—at \$199 it can't be beat.

AUDIO PLAYER	Price	Software	Battery life	Weight	DW verdict
Dell Pocket DJ (★★★★★) dwfind.com/45676	\$199	Musicmatch 9	10 hours	4.4 ounces	Less expensive than the iPod Mini, and offers 1GB more storage.
Virgin Player 5GB (★★★★★) dwfind.com/45680	\$249	Windows Media Player 10	8 hours	3.1 ounces	Functional and fun (with a penchant for Monty Python-style humor), and includes a nice little FM radio.
GoVideo Rave-MP ARC 5 Preproduction model; not rated dwfind.com/45678	\$250	Windows Media Player 9	15 hours	2.8 ounces	Poor sound quality and other annoyances are nothing to rave about.

¹ Vendor estimated.



DELL'S Pocket DJ.

Now Affordable: TiVo With DVD Burning



THE DRT800 offers the best of both worlds: TiVo's hard drive-based television recording and the ability to archive to DVD.

HUMAX'S NEW DVD recorder with TiVo doesn't break much new ground in terms of technology, but it brings together an impressive array of capabilities in one box at a price that won't leave you shell-shocked.

At \$499, the **DRT800** sells for much less than the comparably

equipped Pioneer DVR-810H, a groundbreaking product that cost \$1199 when it came out.

The DRT800 stores up to 80 hours of content on its 80GB drive, and includes a 4X DVD-R/RW drive that lets you transfer content to disc (it won't allow direct-to-DVD recording). It also serves as a progressive-scan DVD player, and plays back audio and MP3 CDs.

You can squeeze up to 6 hours onto a DVD using the device's Basic Quality setting, but it looks pixelated. Recording at High Quality (2 hours) and springing for extra discs is

TURN TIVO UP A NOTCH

TIVO'S HOME AND MEDIA feature lets you view pictures and listen to MP3s stored on a PC (if your TiVo is networked). But **Java Home Media Option 2**, a nifty free application you run on your PC, lets you use your TiVo to view local movie theater schedules, weather forecasts, and images stored on Web sites, as well as receive Shoutcast Internet radio broadcasts.

dwfind.com/45660

better. I burned a dozen DVD-R and DVD-RW discs using both expensive and cheap media, and all of them played fine in a mix of DVD players.

The device isn't perfect. I wish it offered editing tools for cutting commercials or

trimming the home videos you can import using various ports (including FireWire).

If you're a TiVo fan ready to archive some of your favorite recordings—or you're simply looking for a great digital video recorder—the DRT800 is a fine choice. —Tom Mainelli

DVR WITH DVD RECORDER

Humax DRT800 DVD Recorder With TiVo

★★★★★

DW VERDICT: TiVo plus DVD burning at an affordable price.

PRICE: \$499 (street)

dwfind.com/45556

IN THE PIPELINE FRESH ARRIVALS



FROM PC TO TV

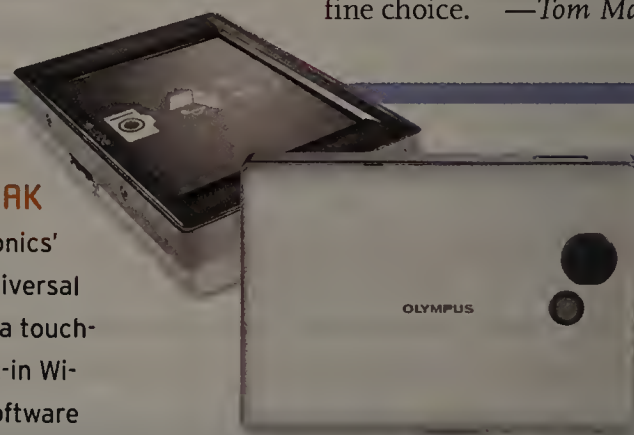
First there was *Ed TV*. Now there's **DAVETV**. The company's HDTV-capable Xport digital media receiver (around \$200, available January) features an 80GB drive and lets you watch downloaded DAVETV content on your TV. dwfind.com/45688

CONTROL FREAK

Universal Electronics' \$800 **Nevo SL** universal remote features a touch-screen LCD, built-in Wi-Fi, and Nevo 2 software

for controlling home theater components and digital media on your PC. Available soon.

dwfind.com/45684



SHOOT AND LISTEN

Convergence is alive and well with Olympus's \$500 **M:robe MR-500i** combination 20GB digital audio player and 1.22-megapixel digital camera. It features a 3.7-inch color touch-screen LCD for buttonless control over music, photos, and slide shows. Available January. dwfind.com/45686



Portable In-Car GPS

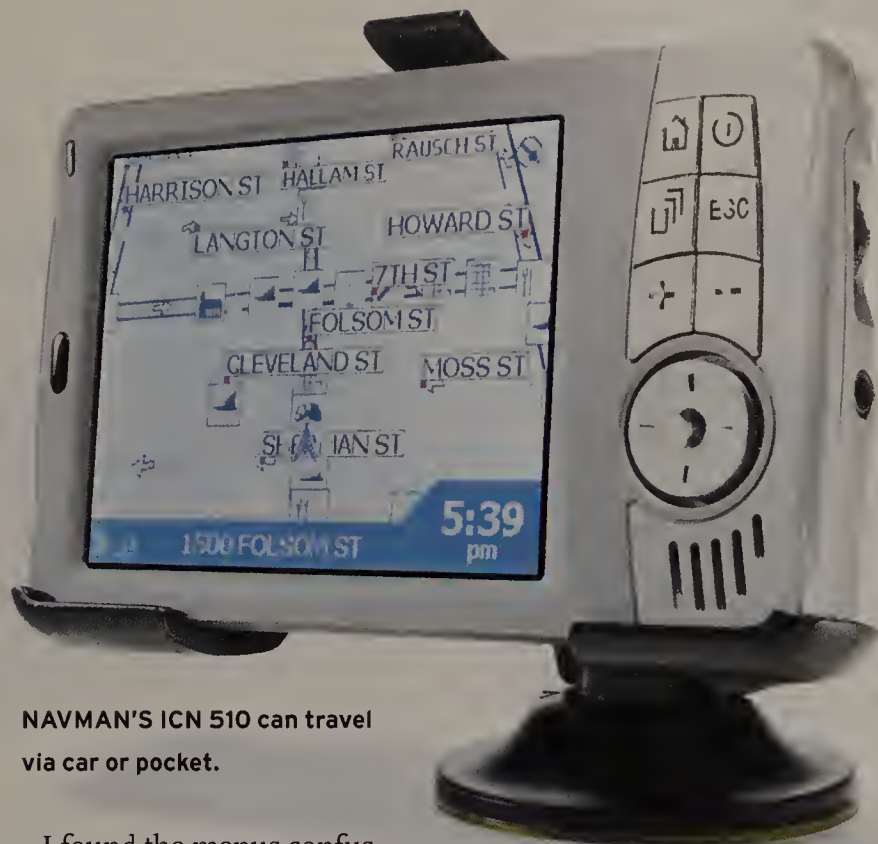
THE ONE PROBLEM with most in-car, removable GPS systems is size: Typically mounted on your windshield, they can obstruct your view. Navman's PDA-size **ICN 510** minimizes that problem.

The ICN 510 has an internal battery and is thin enough to slip in a pocket, making it one of the few navigation systems that work equally well whether

you're in the car or on foot.

I took the ICN 510 with me on a trip from San Francisco to Yosemite National Park and was generally pleased with the unit's navigation capabilities. It has a 3.5-inch color touch screen, and the digital maps are bright and easy to read.

The ICN 510 comes with CDs containing maps of the United States and Canada; you download the maps you need onto an SD Card (not included). The use of flash media keeps the unit's price low, but it may also be the reason why address and point-of-interest lookups are slower than with drive-based models.



NAVMAN'S ICN 510 can travel via car or pocket.

I found the menus confusing at first. For example, it took a while to find Yosemite in the database of places; plus, selecting Favorites drops you into the Shortcuts list first. But despite those quirks, this device grew on me once I got used to it. —Tracey Capen

IN-CAR GPS

Navman ICN 510

★★★★

DW VERDICT: Roadworthy GPS that's also portable enough for when you're on foot.

PRICE: \$425 (street)

dwfind.com/45690

Pause and Hear the Music

DELPHI'S **SkyFi2** XM satellite radio receiver is an evolutionary, not revolutionary, upgrade to the first SkyFi.

It provides more channel presets (30 versus 20), a nicer LCD (black-and-white versus the original's amber-and-black, which washed out in bright sun), plus the ability to scroll a stock ticker or sports scores along the display. It also lets you auto-jump to a favorite song or artist.

But the best new perk is the ability to buffer 30 minutes of audio, which means you can

repeat that Tears for Fears song you just heard. Although you can't record with the device, pausing and replaying definitely has advantages.

I tested the SkyFi2 with the \$60 car cradle kit (XM service costs \$10 a month). The

SkyFi2's built-in FM transmitter worked great, though I found the fidelity to be better when using a cassette adapter.

If you're in the market for satellite radio, you can't go wrong with the SkyFi2.

—Carrie Shepherd



XM SATELLITE RADIO

Delphi SkyFi2

★★★★

DW VERDICT: A solid upgrade of an already fine product.

PRICE: \$100 (street)

dwfind.com/45692

TV FACTS THEN & NOW

8.8 Percentage of households in 1950 that owned a TV

98 Percentage of households today that own a TV

1 Percentage of TV households in 1950 that owned multiple sets

76.4 Percentage of TV households today that own multiple sets

14,000 Number of digital TV sets sold in 1998 (first year of sales)

5 MILLION Number of digital TV sets projected to have been sold in 2004

124 MILLION Number of homes that tuned in to the *M*A*S*H* finale in 1983

10.8 MILLION Number of people who tune in to *Fear Factor* today

—Susan Ashworth

SOURCES: Nielsen Media Research, U.S. Census Bureau, National Association of Broadcasters, TV-Turnoff Network, Television Bureau of Advertising, National Institute on Media and the Family, Consumer Electronics Association

Bring Harmony to Your Home



WHAT GOOD IS a home theater if it's a colossal pain to use? A universal remote like Logitech's **Harmony Remote 676** makes controlling all of your components easy.

To program the Harmony, you log on to a Web site and tell a wizard what TV, DVD player, cable box, or other devices you have. You then answer questions about your setup (for example, what video input your DVD player is connected to), plug the remote

UNIVERSAL REMOTE

Logitech Harmony Remote 676

★★★★★

DW VERDICT: Slick, powerful, and easy to use.

PRICE: \$160 (street)

dwfind.com/45694

into your PC with a USB cable, and download the codes to control your devices. Sound simple? It is. —*Eric Dahl*

1 Action buttons: With one press you can watch TV; play a CD, DVD, or video game; or listen to the radio. Custom setup options let you control what happens when you start any of those activities (for instance, you can tell it to set the surround mode on your receiver when you play a DVD). Now if they could only automate making popcorn....

2 Help button: Wow: a Help button that actually works! For instance, when the DVD action didn't switch to the correct input on my receiver, the

help menu guided me in troubleshooting the problem.

3 Screen: Access less frequently used commands (like the volume-tweaking commands on a CD changer) from this screen. The Harmony can also download TV-program listings for your favorite channels via USB and display them here.

4 Command buttons: Finding key commands like Play, Fast Forward, and Change Channel by touch is easy.

5 Glow button: When you need to see what you're doing in the dark, the Glow button makes the other buttons on the remote light up.

TALK OF TOKYO

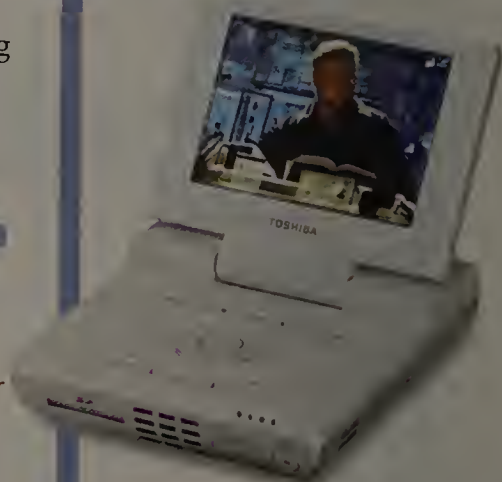
Sony PSP

Why it's hot: Announced way back in July, Sony's handheld game console began shipping in December in Japan, and will reach U.S. shores in the next few months. If you can't wait, order one through Dynamism.com (dwfind.com/45800).



Sharp 65-Inch LCD TV

Why it's hot: Sharp's prototype TV is the world's largest LCD television, offering a bright, sharp, high-definition picture. No release date for either Japan or the U.S.



Toshiba MTV-S10

Why it's hot: This pocket-size device receives TV and radio broadcasts directly from satellite for viewing on the 3.5-inch display. Compatible with a new broadcasting service in Japan, with no plans for a U.S. release.

—*Martyn Williams*

PORTABLE IPOD BOOM BOX



THE \$150 IBooM is a great little boom box for your third- or fourth-generation iPod, or your iPod Mini. It runs off AC power or six D batteries, and if plugged in, charges your docked iPod. With four speakers and 20 watts of power, the IBooM won't wow audio purists (the bass is too heavy and there's no built-in equalizer). Still, I was pretty thrilled: It was loud enough, sounded good enough, and—thanks to a convenient handgrip—was easy to carry around my house during a day of chores. (★★★★★, dwfind.com/45696)

—*Helmut Kobler*

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1600 / 2000 lumens
SVGA/XGA resolutions
4.2 lbs



Value Series
P86110 / P86210
2000:1 Contrast Ratio
1500 / 2000 lumens
SVGA/XGA resolutions
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SVGA/XGA resolutions
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XGA resolutions
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For the ultimate choice in DLP technology projectors, go to the DLP experts—BenQ. Our huge array of projectors features ultra-high 2000:1 contrast ratios, up to 3000 ANSI lumens, and end-user pricing starting at \$999. Every BenQ projector includes a DLP Chipset that ensures high-quality, digitally based images that won't fade or degrade over time. And with our 3-year warranty and 1st year QXchange policy, it's fast and easy to get a new projector should you need a replacement. For more details, call 1-866-700-2367 or visit us at www.BenQ.com.

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BenQ
Enjoyment Matters

High-Tech Cars for '05

THINKING ABOUT trading in the old Malibu for something jazzier? The 2005 **Acura RL** and the 2005 **Audi A6** take automotive technology to such new heights that they make most other cars seem like horse-drawn carts. I took both cars for extended drives and checked out their high-tech equipment. These are just a few of the features that you probably won't find on your old boat.

—Alan Stafford

ACURA RL

\$48,900 loaded
dwfind.com/45698

Climate control: The RL uses the onboard GPS and a solar sensor to calculate the position of the sun and adjust the fan speed to compensate for heating from direct sunlight.

Sound system: Featured are a ten-speaker Bose surround-sound system; a six-disc In-dash changer that plays DVD-Audio, SACD, and MP3 CDs; and XM satellite radio. Sound quality is phenomenal, aided by a very powerful amplifier.



Keyless entry: Walk up with the remote in your pocket and touch the door handle; the door unlocks. You also don't need to pull out the remote to start the car; just turn a knob on the steering column.

Engine: With a 300-horsepower V6 engine, the RL seemed plenty quick, but still land-bound. You can, however, shift it manually via Formula 1-style paddles behind the left and right steering wheel spokes.

Navigation: The RL displays satellite-based real-time traffic information on its 8-inch LCD, providing info on accidents, construction, and traffic speed in 20 metro areas. Too bad it doesn't work with the car's GPS system to direct you around jams. The nav system responds to voice commands, as do the audio and climate-control systems.



AUDI A6

V6: \$40,900; V8: \$50,500
(not including options)
dwfind.com/45700

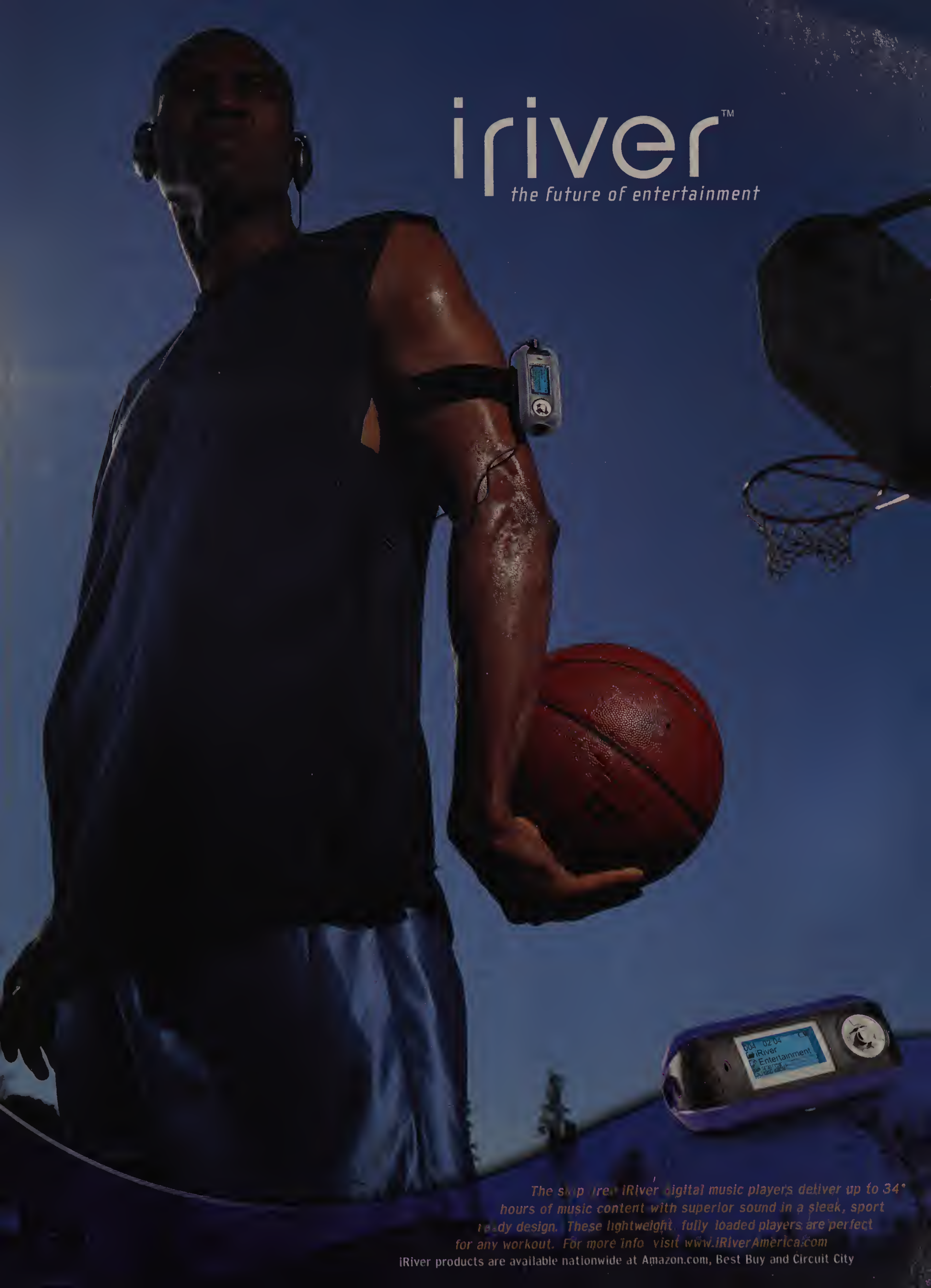
Tech toys: The Audi offers a keyless-entry feature as a \$750 option. The A6 also features Bluetooth for hands-free cell phone operation (as does the Acura RL).

Navigation: The A6's optional navigation system (\$1500) relies on Audi's Multimedia Interface system, a control knob just behind the gearshift.

Engine: The 255-hp V6 version is fast, but the 355-hp V8 model has astounding power—like sitting on a lit rocket.

Sound system: The radio searches for stations and shows them on a 7-inch LCD. A \$1300 upgrade includes Sirius or XM radio, but won't play DVD-A or SACD discs.





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The sleek iRiver digital music players deliver up to 34* hours of music content with superior sound in a sleek, sporty design. These lightweight, fully loaded players are perfect for any workout. For more info visit www.iRiverAmerica.com
iRiver products are available nationwide at Amazon.com, Best Buy and Circuit City

Secrets of the Superphones

New cell phones let you browse the Internet, play games, listen to streaming digital audio, and even watch TV. Here's how they do it. BY MICHAEL DESMOND

CURRENT AND FUTURE CELLULAR TECHNOLOGIES

CELL PHONES WITH THE latest technologies can already send and receive digital data more quickly than a landline modem, so you can use them not just to check movie listings, but also to stream video (as long as you don't mind Regis and Kelly cutting out in midsentence). Broadband-level cellular transmission speeds are in the works.



GSM (GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS)

Peak data rate: 9.6 kbps
Typical data rate: 9.6 kbps
Introduced: 1991
Carriers: AT&T Wireless, Cingular, T-Mobile
Notes: Most widely deployed

digital cellular network technology, with about 1 billion subscribers worldwide. Most GSM phones now use GPRS for data.



CDMA (CODE DIVISION MULTIPLE ACCESS)

Peak data rate: 10 kbps
Typical data rate: 10 kbps
Introduced: 1995
Carriers: Sprint PCS, Verizon
Notes: CDMA phones pur-

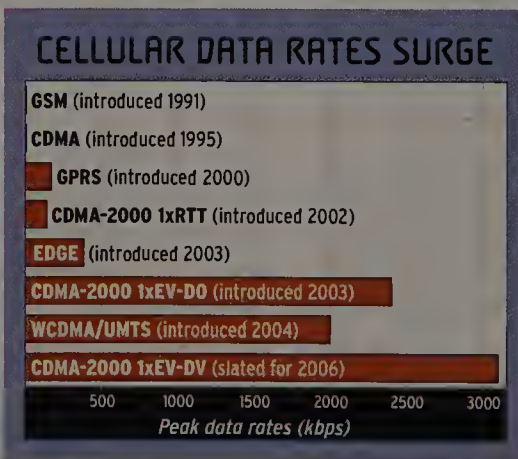
chased in the United States usually don't roam in many overseas countries, even if CDMA networks exist. Domestic coverage is widespread, but data rates are sluggish.



GPRS (GENERAL PACKET RADIO SERVICE)

Peak data rate: 170 kbps
Typical data rate: 30 kbps
Introduced: 2000

Carriers: AT&T Wireless, Cingular, T-Mobile
Notes: GPRS was the first data-centric digital cellular service. It's usually found on GSM phones, and it has enough bandwidth for basic functions like e-mail.



CDMA-2000 1xRTT (CDMA SINGLE-CHANNEL RADIO TRANSMISSION TECHNOLOGY)

Peak data rate: 144 kbps
Typical data rate: 70 kbps
Introduced: 2002

Carriers: Sprint, Verizon
Notes: First data service for CDMA carriers; widely deployed in the United States. Data rates can handle low-end video streaming.



EDGE (ENHANCED DATA RATES FOR GLOBAL EVOLUTION)

Peak data rate: 384 kbps
Typical data rate: 120 kbps
Introduced: 2003

Carriers: AT&T Wireless, Cingular
Notes: Using the same wireless spectrum as GPRS does, EDGE offers a four- to five-fold increase in data transmission rates. Two of the three GSM carriers offer it; the other, T-Mobile, has yet to announce an EDGE deployment, though it is expected.



WCDMA/UMTS (WIDEBAND CODE DIVI- SION MULTIPLE ACCESS/ UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM)

Peak data rate: 2 mbps
Typical data rate: 400 kbps

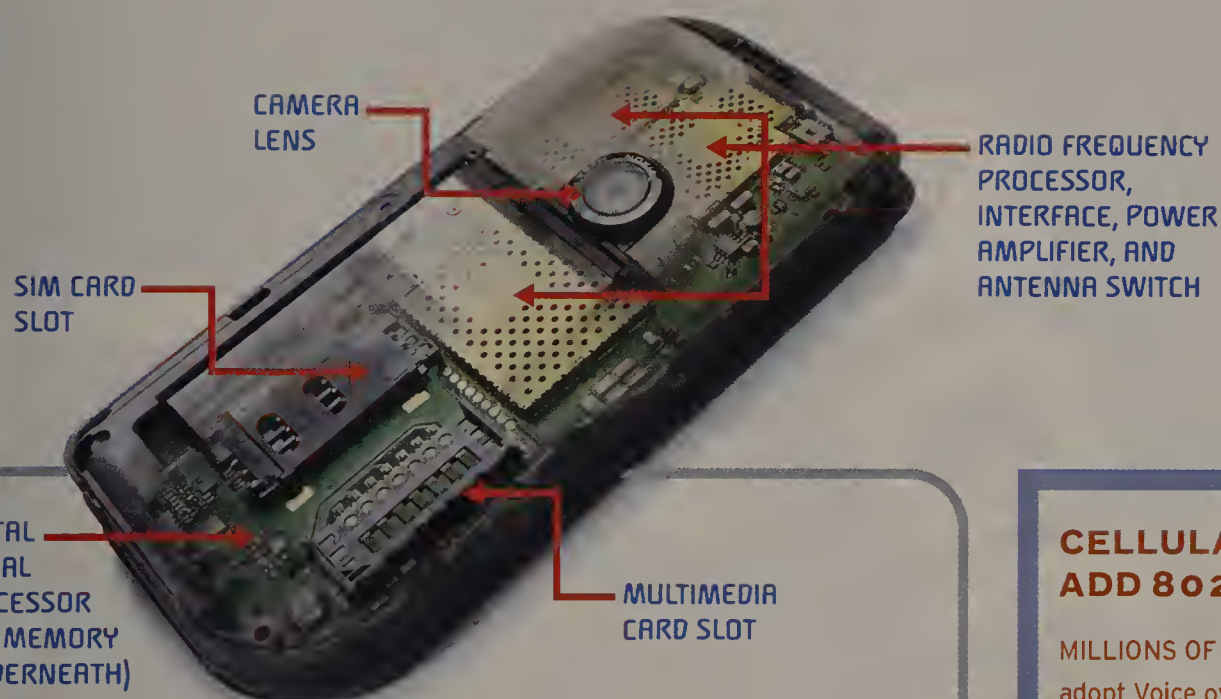
Introduced: 2004
Carriers: AT&T Wireless, Cingular
Notes: AT&T offers it in six U.S. cities; Cingular expects to deploy it in 2005. By 2006 a version called High-Speed Downlink Packet Access may push data rates to 14 mbps.



CDMA-2000 1xEV-DO (CDMA SINGLE- CHANNEL EVOLU- TION, DATA-ONLY)

Peak data rate: 2.4 mbps

Typical data rate: 600 kbps
Introduced: 2003
Carriers: Sprint, Verizon
Notes: 1xEV-DO is emerging quickly in metro markets. Next up (likely in 2006) is 1xEV-DV, which is supposed to boost performance over the DO version by one-third.



INSIDE A SUPERPHONE

LARGE DISPLAYS AND EMBEDDED cameras are now common on cell phones, and these features require lots of processing power. But the secret to media-slinging models is integration: Many phones, such as this Nokia 7610, combine multiple functions, including video playback, image capture, 3D graphics display, and signal processing, in fewer chips, thus permitting creation of a smaller phone.

CELLULAR ENTERTAINMENT SERVICES

CELLULAR PROVIDERS OFFER MANY ways to play with your phone, though that fun often comes with hefty fees. AT&T and Sprint now offer live mobile TV, and Sprint touts a streaming video-on-demand service as well, called Vision Multimedia Services. Many high-end phones play un-copy-protected music tracks you download from your PC. But only AT&T Wireless customers currently can buy and download music directly to a phone—and that's limited to a single handset, the Audiovox SMT5600, which employs Microsoft's Windows Media Digital Rights Management 10 technology. All of the carriers offer downloadable games and various Multimedia Messaging Services (MMS), which let you send pictures and video and audio clips to other phones or PCs. Three carriers offer push-to-talk (walkie-talkie) service.

EVERY PROVIDER OFFERS single- and multiplayer gaming. AT&T Wireless has the most features overall, letting you download music and play live TV.

PROVIDER	Streaming video	Music downloads	Television	MMS	Other
AT&T	Yes	Yes	Yes	Images, video ¹	No
Cingular	No	No	No	Images, video	No
Nextel	No	No	No	Images	Push to talk
Sprint	Yes	No	Yes	Images, video	Push to talk
T-Mobile	No	No	No	Images, video	No
Verizon	No	No	No	Images, video	Push to talk

¹ Video MMS on AT&T's UMTS networks only.

CELLULAR PHONES ADD 802.11 WIRELESS

MILLIONS OF HOMES ARE expected to adopt Voice over IP (VoIP) services like AT&T CallVantage and Vonage in the next couple years. A new breed of cell phones, which combine 802.11 Wi-Fi capability with digital cellular operation, will arrive soon. SBC, for example, announced in October that its public Wi-Fi hotspots will be able to carry calls from Cingular subscribers. Hybrid phones such as the Motorola MPx

MOTOROLA MPx hybrid phone.



(dwfind.com/45930) can place calls on cellular networks on the road but use less-expensive VoIP service in the home, at the office, or in other locations offering Wi-Fi access. However, phones must be able to detect and switch to compatible networks, and carriers must deploy extensive infrastructure to support seamless call transfers between the cellular and IP networks.

Michael Desmond is a freelance writer based in Vermont.

Innovations 2005

Ready for the next generation of entertainment tech? It's here—and these products let you bring it all home.

CONTRARY to what some manufacturers claim, not everything new is innovative. Slapping a new shape or color on an old product doesn't qualify.

No, true innovation is about rethinking what technology can do for us. And that's just what the winners of the 2005 Digital World Innovations Awards do. They surprise us. They excite us. And most of all, they entertain us in ways we've never been entertained before.

BY THE EDITORS OF DIGITAL WORLD

AND THE WINNERS ARE...

Digital
World

2005
INNOVATIONS

SUBSCRIPTION MUSIC A-GO-GO

MICROSOFT WINDOWS MEDIA DIGITAL RIGHTS MANAGEMENT 10



THE ALLURE OF SUBSCRIPTION music services is the access to hundreds of thousands of songs for one monthly fee. The downside: To listen, you've been stuck using a broadband-connected PC. Microsoft's Windows Media Digital Rights Management 10 platform changes that. Using Microsoft's PlaysForSure Web site (www.playsforsure.com), you match up subscription services (like Napster) and devices (like Creative's Zen Personal Media Center). After that, you can put as many songs on your device as it will hold. A hardware-based clock in the player keeps track of your status, and as long as you subscribe to the service, you'll never run out of tunes. dwfind.com/45662

THAT'S ENTERTAINMENT

HP DIGITAL ENTERTAINMENT CENTER Z500 SERIES

LOOK! There in the living room. It's a stereo component, it's a digital video recorder, no wait—it's both, and a PC, too. HP's Z500 Series puts it all together in a sleek black, brushed-aluminum box that anyone could mistake for a DVD player or AV amplifier. Packed in its handsome chassis is a Microsoft Windows XP Media Center Edition 2005-powered PC with dual TV tuners, a 160GB or 200GB internal hard drive, a bay for HP's 160GB removable USB hard drive (included with the 200GB model), Wi-Fi, a wireless keyboard and remote, a DVD burner, and Dolby Digital 5.1. The \$1699 Entertainment Center is more versatile than any dedicated media component—it's the first PC in full entertainment clothing. dwfind.com/45594 ▶

HIGH-DEF HOME MOVIE MAKER

SONY HDR-FX1 HANDYCAM

ANYONE WHO HAS BROWSED a Best Buy store knows high-definition makes almost any video captivating. Hey, even your relatives might want to watch your home movies if you record them in HD. First, you'll need one of these: Sony's HDR-FX1 HandyCam. Although it's not the first HD camcorder—JVC's GR-HD1, introduced in 2003, captured 720p high-def video—it's the first one that handles 1080i HD video and doesn't require Trump funds (it's a relatively affordable \$3700). The HDR-FX1 uses mini-DV cassettes to hold up to 63 minutes' worth of footage. At 4.25 pounds it seems more like a semipro model than a "consumer camcorder," as Sony likes to call it, but something this innovative just isn't going to fit in your pocket.

dwfind.com/45910





WHEN IS A NOTEBOOK NOT A NOTEBOOK?

SHARP ACTIUS MP30

THE SHARP ACTIUS MP30 looks like an ultraportable notebook. In fact, it is one: Push the \$1899 unit's topside power button, and you boot into Windows. But if you'd rather use the 2.8-pound notebook to watch movies or listen to music instead of work, you can skip the hassle of loading Windows and just press Play. While other similarly functioning notebooks are out there, Sharp's is the only one that comes in a slim, stylish case that's so light you could forget you're carrying it. The 10.4-inch XGA display produces rich, saturated colors whether you're watching *Star Wars* or creating a PowerPoint presentation, and the battery maintains power for the promised 4-plus hours. dwfind.com/45604



TV ON DEMAND

AKIMBO AP1200

TO MISQUOTE Bruce Springsteen, we live in the age of 500 TV channels—and it can still feel like nothing's on. Enter Akimbo, an inventive new \$10-per-month service that uses your home network and broadband connection to deliver an eclectic array of downloadable programming to your television. The \$230 Akimbo AP1200 is a TiVo-like box that stores up to 200 hours of downloaded shows. Plug it into your network, and you can start picking programs, from vegetarian cooking shows to Hindi movies. Akimbo also plans to offer software that lets you use its service on a Media Center PC. dwfind.com/45612

INNOVATIVE THEN, INNOVATIVE NOW SONY'S DIRECT-TO-DISC CAMERAS

WAY BACK IN 1997, digital cameras were innovative, period. They were also pricey—and so were memory cards. But Sony's Mavica MVC-FD7 had a built-in drive that let you store photos on the cheapest, handiest media of all: 1.44MB floppy disks that you could easily use in any PC. Floppy-based Mavica models



stayed popular for years, until images got big and flash memory got affordable. Today's Handycam DCR-DVD301 and its brethren are a 21st-century spin on the same idea: Their built-in DVD burners let you record digital video directly to disc, so you can skip the hassle of tapes and FireWire cables.



JOE HUTSKO
TV GUIDE'S TV TECH
COLUMNIST

**“The Philips Ambi-
light is my oddball
pick. It’s sort of a
given that you
should have light
behind your TV, but
I don’t know anyone**

**who does that. The Philips Ambilight [a technology
within Philips flat-screen TVs] is a subtle light behind
the TV that glows, fans out, and hits your wall. It’s kind
of like a mood ring. Say you’re watching HDTV content
of the Mediterranean. It will shift to blue.... It’s innova-
tive in that no one has really thought of it before.”**

SOUNDS IN THE ROUND

VIRGIN ELECTRONICS BOOMTUBE EX

THE SMALL SIZE of portable speakers for digital audio players, portable DVD players, and notebooks has limited their sound quality, largely because decent bass requires more room to resound than those compact systems are able to provide. Virgin Electronics’ \$199 Boomtube EX surmounts the bass hurdle with tubular aluminum speakers that deliver room-filling bass. The right and left satellite speakers unscrew from the Thermos-shaped main body, and a rechargeable battery powers the entire unit. The Boomtube EX pushes 40 watts of sound, and you can spread the satellites out for true stereo separation. And best of all, the volume control goes to 11. dwfind.com/45598



THE PEOPLE'S ROBOT

WOW WEE TOYS ROBOSAPIEN

SOONER OR LATER, robots may change all of our lives. Plunk down \$99 for Wow Wee Toys’ Robosapien, and one can change your life right now—or least make it more entertaining. If Sony’s \$1899 Aibo is the Lamborghini of robotic playthings, Robosapien is a humble but lovable Volks-robot. He walks, he talks, and he can even pick things up—as long as you position them very, very carefully. Most important, he’s both programmable (via the included remote) and hackable. An array of Web sites chronicle the work of inventive owners who’ve taken soldering irons and Dremel tools to their bots to add new functionality. dwfind.com/45610 ▶



DVD SCENE AUTOMAT

GOVIDEO VR2940 DVD RECORDER+VCR

LIKE CLOCKWORK, set-top DVD recorders typically create chapter markers at regular intervals—say, every 5 minutes or every 10 minutes. But those intervals aren't necessarily the ones you'd pick for chapter breaks if you were inserting them yourself. GoVideo's \$350 VR2940 DVD Recorder+VCR is the first consumer device to offer YesVideo's Yes-DVD scene detection technology, which adds chapter marks at logical points. For example, the unit places chapter breaks when the action in a scene fades out or the camera switches angles. The technology isn't perfect—we'd like to see chapter markers around commercials in recordings from TV—but it's on the right track. Plus, the resulting disc includes a handy index file so you can easily create labels with thumbnails of the DVD's content. dwfind.com/45664



TV WHERE YOU WANT IT

SHARP AQUOS LC-15L1U-S

WIRELESS INTERNET MADE IT POSSIBLE to work from anywhere in the home; now "wireless" television lets you play from just about anywhere in the house. Plug your cable, satellite, DVD player, or VCR into the wireless base station of Sharp's \$1699 Aquos flat-panel LCD, and you're free to roam (up to 50 feet) and take Homer Simpson with you. The device maintains your television connection for 3 hours between battery charges. Sharp figured you might want to watch the wire-free TV from unconventional placements—such as hanging upside down on your gravity-inversion system—so an image inverter lets you switch the angle of the display. It doesn't hurt that the 11-pound Aquos display is, well, sharp, even at 170-degree viewing angles. dwfind.com/44594

INNOVATIVE THEN, INNOVATIVE NOW CREATIVE KEEPS BUILDING A BETTER JUKEBOX

BACK IN 2000, Creative's \$499 Nomad Jukebox was a revolutionary MP3 player, thanks to its then-enormous 6GB hard-drive capacity. It could store an unheard-of 100 hours of music, but was the size of a portable CD player and offered 4 hours of battery life (on a good day).



Five years later, Creative is still making Jukebox models, and they're still impressive. The \$399 Nomad Jukebox Zen Xtra, for instance, is much smaller than the first Jukebox, offers ten times the storage capacity (60GB), and can run upwards of 10 hours between charges.

EXPERT OPINION

YOU CAN HEAR ME NOW

ALIPH JAWBONE

"ARE YOU ON a cell phone?" Aliph's Jawbone may not render that question obsolete, but this \$150 cell phone headset can eliminate many of the telltale signs that you're calling from a bustling city street or overcrowded airport lounge. The unit's unique noise-subtraction, echo-cancellation, and audio-enhancement technologies do a startlingly good job of stripping out background noise and amplifying your voice—which should please anyone who's actually trying to hear what you have to say. In this era of wireless Bluetooth headsets, the corded Jawbone feels a tad retro. But it fits comfortably on either ear, doesn't require batteries, and neatly embeds its noise-busting brain in a clip that fastens to your clothing. And its white-and-silver industrial design is cutting-edge: If an iPod were a headset, it would look like this. dwfind.com/45608



JOEL JOHNSON
EDITOR OF GIZMODO
(WWW.GIZMODO.COM),
THE WEBLOG FOR
GADGETS

**"The Archos
Gmini 400 is an
iPod-size player
that I've been an
advocate for this
season. [The
Gmini is] more**

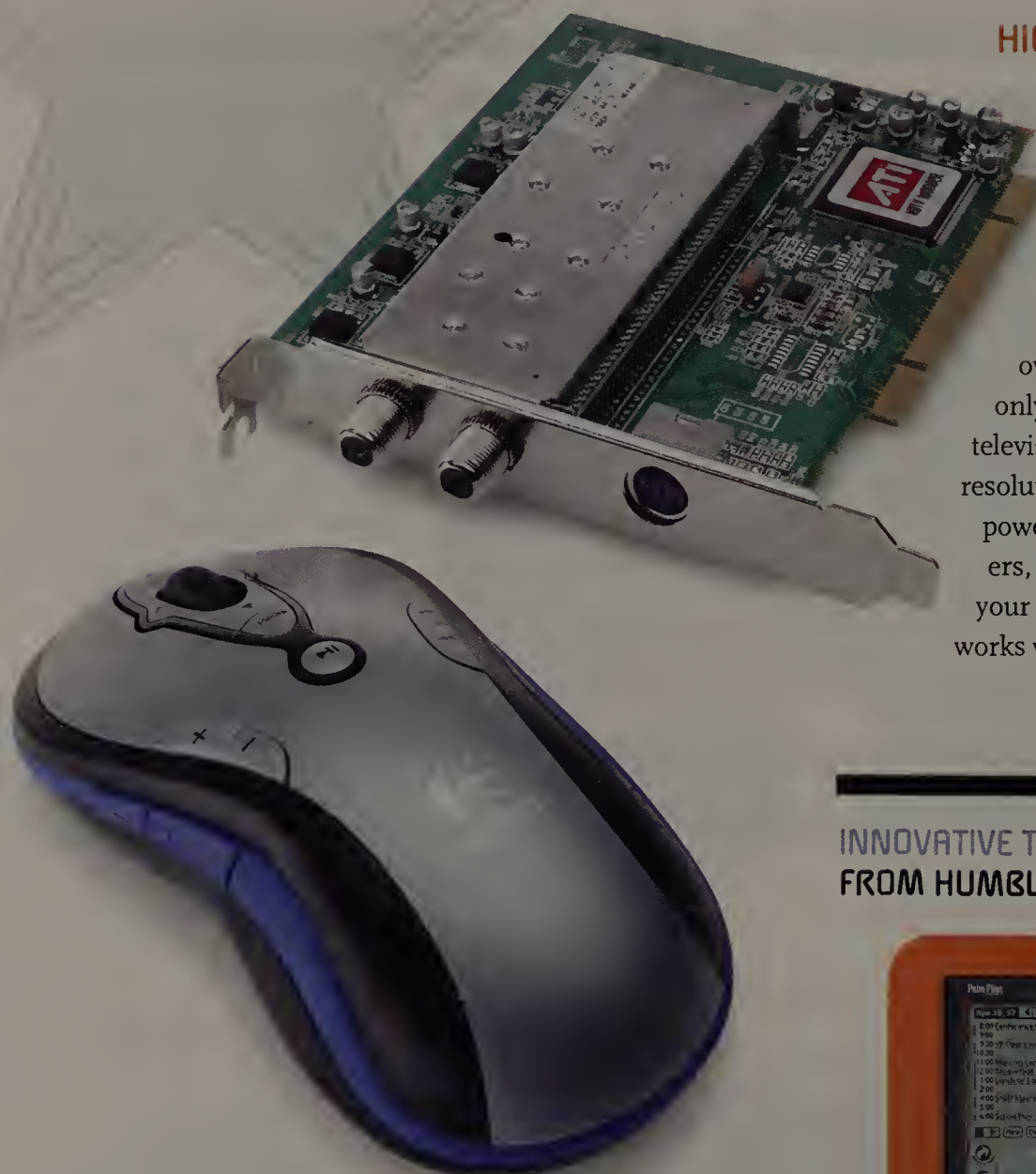
**techie than the iPod, but it plays music and video, and
it's still small and convenient."**



SWISS ARMY SATELLITE RADIO

DELPHI MYFI

WHERE DO YOU LIKE to listen to the radio—in the car, around the house, on the run? Delphi's \$350 MyFi is the first satellite radio that lets you do all of the above. This feature-packed Walkman-like device lets you listen to XM Radio's 100-plus channels of music, news, talk, and more through headphones, indoors or out—or you can use the embedded FM transmitter to broadcast via your car audio system or home stereo. Features like TuneSelect—which knows when your favorite artists and songs are on the air—help you get the most out of all that programming, which costs \$10 a month. While MyFi takes satellite radio places it has never been before, reception still isn't available everywhere, such as deep in an office building's windowless corridors. But Delphi has built in an inventive workaround: a VCR-like feature that lets you record up to 5 hours of programming for later listening. dwfind.com/45798



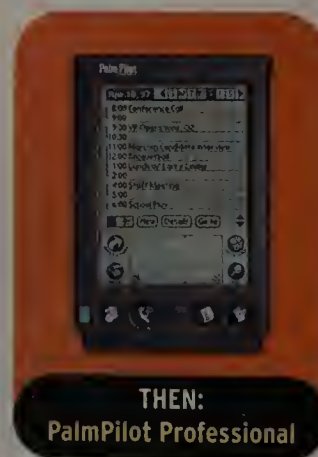
HIGH-DEF TV ON YOUR PC

ATI HDTV WONDER

ONCE THE EXCLUSIVE domain of the exceedingly well-heeled, high-definition TV is now within reach of normal budgets. With ATI's HDTV Wonder, the less affluent among us can enjoy HDTV too.

The PCI card with its included antenna brings over-the-air HDTV broadcasts to your PC for only \$200—a fraction of the cost of a new high-def television. Most PC monitors can handle HDTV resolutions easily, so if your PC has plenty of CPU power and is within range of HDTV broadcast towers, the Wonder can display gorgeous video. If your setup meets these requirements, the Wonder works wonderfully well. dwfind.com/44670

INNOVATIVE THEN, INNOVATIVE NOW FROM HUMBLE ORGANIZER TO SUPERPHONE



THEN:
PalmPilot Professional



NOW:
Treo 650

A MOUSE THAT HAS MASTERED MEDIA

LOGITECH MEDIAPLAY CORDLESS MOUSE

LOGITECH'S MEDIAPLAY Cordless Mouse was designed for more than mousing around—it doubles as a media remote control. You can manage your MP3s, audio CDs, and video DVDs totally via the mouse; the extra ten backlit media buttons on this ambidextrous pointing device transform it into a convenient remote control. Just pick it up and stand back from your PC—up to 10 feet away—and the \$50 device becomes a handheld remote for instant track selection, volume control, and other standard playback functions. A tilt wheel lets you scroll in three dimensions for viewing digital photos from various angles. And an on/off switch right on the device saves battery life, too. You can use the included MediaPlay software, or switch to other popular alternatives (Microsoft Windows Media Player, Musicmatch, Real, and more). dwfind.com/45602

PALM COMPUTING'S PILOT 1000, launched in 1996, revolutionized the concept of the personal digital assistant. Then in 1997 the company launched its now-legendary PalmPilot models, the \$399 Professional and the \$299 Personal. Both PalmPilots included the user-friendly Palm OS interface, a touch-sensitive monochrome display with the clever Graffiti handwriting recognition system, and enough memory to hold thousands of names and addresses. Flash forward to 2005: Palm Computing has evolved into PalmOne, and the venerable operating system is still wonderfully simple, but more powerful than ever. The company's \$450 Treo 650, the evolutionary descendant of the PalmPilot, has a 65,000-color high-resolution display, an SD Card slot for multigigabyte memory expansion, a built-in digital camera and audio capability, and a remarkably usable micro-keyboard. It does e-mail, Web browsing, and other Net tasks, too. Oh, and did we mention it's also a phone?



Digital Lifestyle Reloaded

Nero 6 Ultra Edition – Capture, Copy, Burn, Author, Edit, Playback and Share with the ultimate all-in-one digital media solution.

Recognized as the world's first DVD+R Double Layer enabled software, Nero 6 Ultra Edition with **Nero Recode 2** allows you to backup over 10 DVD movies to one Double Layer DVD without any loss of quality using Nero Digital™ technology.* With **Nero MediaHome** you can now easily stream your music, your videos and your photos through a software based media server. **Nero 6 Ultra Edition** is the perfect fit for your connected digital home.

Nero – Simplify Your Life
WWW.NERO.COM

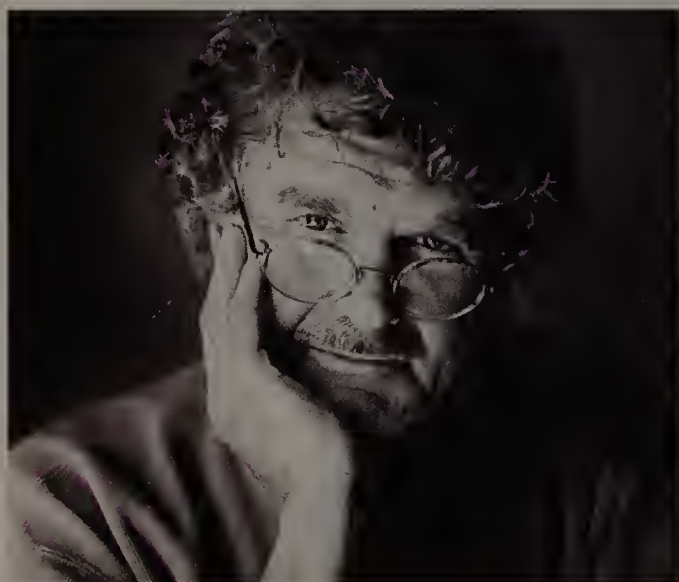


Available at participating retailers, including:



* Does not copy DVDs with copy protection

EXPERT OPINION



**HARMUT
ESSLINGER**
FOUNDER AND
CO-CEO OF FROG
DESIGN, WHICH
DESIGNED THE
SONY TRINITRON IN
THE MID-1970S AND
CREATED THE LOOK
OF EARLY APPLE
PRODUCTS.

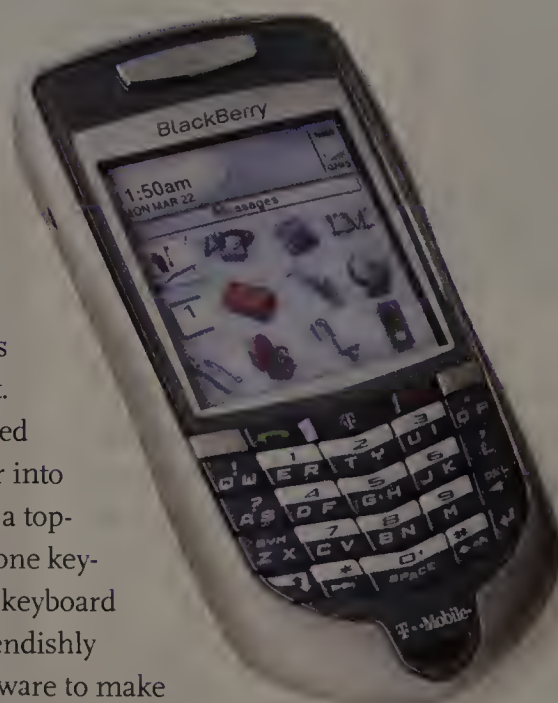
“The iPod Mini I
like. The product

is so characteristic in shape; it's like a symbol. Thank God it has colors. I love colors. Mine is green, currently in my pocket. The interface is simple—it's not perfect but it's simple. It could be improved. When you get deeper and deeper into lists and go back, back, back, back, that gets kind of boring to me.”

THE GREAT COMMUNICATOR

BLACKBERRY 7100T

RIM'S VENERABLE BlackBerry was a major innovation in its day, drawing a cultlike following of busy execs and IT professionals. In 2004 RIM has done it again with the new \$200 7100t. The company has packed all the beloved features of the original text messenger into a device that feels, acts, and looks like a top-notch cell phone. Then there's the phone keypad that doubles as a quasi-QWERTY keyboard (it has two letters per key) and uses fiendishly clever SureType predictive-typing software to make firing off urgent e-mail a breeze. Add a high-resolution color screen, a built-in hands-free speakerphone, and a remarkably reasonable price, and you've got one truly great communicator on your hands. dwfind.com/44612



THIS CARBON'S NO COPY RIO CARBON

SOME THINGS just *feel* innovative—like Rio's silver-clad Carbon MP3 player. Apple's iPod Mini may have invented the mid-capacity player (smaller than a standard hard-drive-based player, larger than a flash player), but this sexy little number came along and did most everything notably better. Despite its pocket-perfect slim profile, the Carbon holds a full 1GB more than the Mini (for 5GB total), it includes a handy voice-memo recorder, and it works with nearly every online music store under the sun, including (after a firmware upgrade due by the time you read this) ones that support Microsoft's Windows Media 10 DRM as discussed on page 21. Oh, and we can't forget that the Rio Carbon runs for more than 20 hours on a single charge, while the Mini sputters out at about 8 hours. The Carbon isn't perfect—an early batch had some headphone-jack problems (since corrected), and at \$250 it's not inexpensive. But hold this player in your hands, and you'll understand what innovation is all about. dwfind.com/43870





Klipsch

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Dual woofers, MicroTractrix™ Horn tweeters and thumping bass ports deliver a truly unforgettable 2.0 experience. Mates nicely with Apple® iPod® and other MP3 players, computers, CD/DVD players – anything with a stereo line output. Powerful. Transportable. Versatile. Visit your Klipsch retailer or klipsch.com.

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We test eight midsize high-def LCD TVs that can fit almost anywhere and are easier on the wallet than you might think.

BY RICHARD JANTZ

TESTING BY ELLIOTT KIRSCHLING AND JEFF KUTA

LOOKING TO UPGRADE to digital TV in a bedroom or small family room? Consider a flat-panel LCD. In midsize spaces, where a 30- to 32-inch CRT set might be too bulky, a wide-screen LCD is ideal for catching high-definition TV shows or a DVD movie. Just inches thick, LCDs fit easily on a small table or shelf, and can even hang on a wall. Most can also serve as PC monitors.

As major electronics players such as JVC and Panasonic entered the LCD television market last year, along with computer giants Dell and Gateway, your choice of these flat screens expanded greatly. And the lively competition is pushing prices down. For example, DisplaySearch, a research firm, predicts that over the course of 2005 the average price for 30- and 32-inch

LCD televisions will drop to \$1760, down by 29 percent from 2004's projected average of \$2482.

For this review, our Test Center examined eight LCD HDTVs built with 30- to 32-inch screens, ranging from no-frills models to pricier sets with advanced color controls, simulated surround sound, and other top-of-the-line features. All of these models provide the high resolution and screen dimensions needed for HD's wide-screen (16:9) format.

When we completed our tests, the results were clear: Mitsubishi's \$3900 LT-3050 earned our DW Choice award for its exceptional color quality and detail, while



Even the best-looking CRT sets can't touch an LCD for the wow factor of the skinny, futuristic profile.

ViewSonic's \$1800 N3000w won DW Value honors for delivering fine overall image quality at a surprisingly moderate price.

But it's worth noting that while image quality varied among the models, the gap

between the best and the worst was hardly huge. Every LCD model we examined displayed brighter and sharper pictures overall than did tube-based sets of equal size.

LCD LOWDOWN

AN LCD STILL CAN'T beat a CRT on price: CRTs of the same size as the sets reviewed here are available for under \$1000—far less than even the cheapest of our LCDs. But a CRT is bulky and heavy, weighing well over twice as much as an LCD, and there are fewer models to choose from. Also, a CRT set can't touch an LCD for the wow factor of the skinny, futuristic profile.

LCD sets generally produce brighter,



TEST REPORT: WIDE-SCREEN LCD TVs—THE HDTV FIRMAMENT'S RISING STARS

OUR TESTS OF EIGHT 30- and 32-inch LCD TVs identified Mitsubishi's LT-3050 as the best of the bunch, but ViewSonic's

LCD HDTV		IMAGE QUALITY BY CHARACTERISTIC				IMAGE QUALITY IN CONTEXT			
		Overall impression	Color quality	Brightness/contrast	Detail	HD television	Standard television	DVD movies	In bright light
1	 Mitsubishi LT-3050 ★★★★★ \$3900 dwfind.com/45782	Better	Better	Better	Better	Better	Better	Better	Better
4	Sharp Aquos LC-32G4U ★★★★★ \$3300 dwfind.com/45784	Average	Average	Average	Average	Average	Worse	Average	Average
3	Samsung LT-P326W ★★★★★ \$2999 dwfind.com/45786	Average	Average	Average	Average	Average	Average	Average	Average
4	LG Electronics DU-30LZ30 ★★★★★ \$2400 dwfind.com/45788	Average	Average	Average	Average	Average	Average	Average	Average
5	 ViewSonic N3000w ★★★★★ \$1800 dwfind.com/45790	Average	Better	Average	Average	Average	Average	Better	Average
6	Panasonic TC-32LX20 ★★★★★ \$3300 dwfind.com/45792	Average	Average	Better	Average	Average	Average	Average	Average
7	Syntax Olevia LT30HV ★★★★★ \$1500 dwfind.com/45794	Average	Average	Worse	Average	Average	Average	Worse	Worse
8	JVC LT-32X575 ★★★★★ \$2600 dwfind.com/45796	Worse	Worse	Average	Worse	Worse	Worse	Average	Average

Most of the TVs listed have additional input and output ports. HOW WE TEST: See dwfind.com/45836.

sharper images, while CRTs have superior color saturation and accuracy (especially with greens and blacks), and they don't suffer the viewing-angle limitations of LCDs. Nevertheless, in an informal side-by-side comparison of two top-rated units, Mitsubishi's LT-3050 LCD and Philips's 30PW8402/37 color HDTV CRT model, the Mitsubishi's vivid colors and crisp images made it our unanimous choice.

Were you considering a plasma display? Few plasma sets are available in these midrange sizes. And LCDs have several technological advantages over plasmas: They're generally brighter, they consume less power, and they don't suffer from im-

age burn-in (ghostly patterns left on the screen by static images), a phenomenon that can permanently damage plasmas.

Vendors claim longer life (the amount of time before a panel's brightness drops by 50 percent) for their LCD screens than for plasma models, too. Sharp, for example, claims 60,000 hours for its Aquos LC-32G4U LCD. Manufacturers typically estimate their plasma displays' useful life at between 20,000 and 30,000 hours.

In the past, LCD TVs exhibited slow response times, causing fast-moving objects to appear smeared. But the models that we looked at are much improved: Most had a specified response time of 16 milliseconds

or less, and they capably displayed such objects as a moving train and racing horses.

LCD TVs do tend to lose brightness and contrast as the viewer moves off center. Most of the models we tested retained good picture quality even when viewed at an angle, but with an LCD the best seat in the house is always front and center.

VITAL STATISTICS

ALL OF THE FLAT PANELS we tested have one or two NTSC (National Television Standards Committee) tuners, for receiving the analog broadcasts that have been the North American standard for the past half-century. Only one model—the ►

moderately priced N3000W performed surprisingly well.

Basic features ¹	Extras	Support policies	DW verdict
• 30-inch, 1280-by-768-pixel screen • Supports 480i, 480p, 720p, 1080i input • OVI input, two component inputs • Single standard NTSC tuner	• Separate R, G, B and secondary color controls; no video presets • Height-adjustable stand • Built-in stereo speakers, plus subwoofer	• One-year parts and labor warranty • 13-hour weekday, 8-hour Saturday, 4-hour Sunday toll-free phone support • Free on-site service	The Mitsubishi's vivid lifelike color and overall high-quality images are the best here, and it's the only set with its own booming subwoofer.
• 32-inch, 1366-by-768-pixel screen • Supports 480i, 480p, 720p input • OVI input, HDMI input, two component inputs • Two standard NTSC tuners	• Separate R, G, B and secondary color controls; nine video presets • Breakout box for all inputs, outputs • PC Card slot, detachable two-way speakers	• One-year parts and labor warranty • 24-hour daily toll-free phone support • Free on-site service	Elegant design and great features are the Aquos's selling points; image quality is adequate but not great.
• 32-inch, 1280-by-768-pixel screen • Supports 480i, 480p, 720p, 1080i input • OVI input, HDMI input, two component inputs • Single standard NTSC tuner	• Separate R, G, B color controls; four video presets • Two-way speakers, SRS TruSurround XT • Auto-adjusts brightness to room lighting	• One-year parts and labor warranty • 24-hour daily toll-free phone support • Free on-site service	Though the Samsung provides top-notch image-adjustment controls and decent surround sound, its image quality is so-so.
• 30-inch, 1280-by-768-pixel screen • Supports 480i, 480p, 720p, 1080i input • OVI input, two component inputs • Standard NTSC and HD ATSC tuners	• Six video presets • Powerful 15-watt two-way stereo speakers • SRS TruSurround XT sound	• One-year parts and labor warranty • 24-hour daily toll-free phone support • Free on-site service	The only unit here with built-in HDTV tuner capability, the LG also boasts the most powerful sound system.
• 30-inch, 1280-by-768-pixel screen • Supports 480i, 480p, 720p, 1080i input • OVI input, two component inputs • Two standard NTSC tuners	• Separate R, G, B color controls; no video presets • Two-way stereo speakers	• One-year parts and labor warranty • 24-hour daily toll-free phone support • No on-site service	Rich, vibrant color sets this model apart from the competition in the runners-up race, and its low price sweetens the pot.
• 32-inch, 1280-by-768-pixel screen • Supports 480i, 480p, 720p, 1080i input • HDMI input, two component inputs • Single standard NTSC tuner	• Gamma control, four video presets • SD Card and PC Card slots • Two-way stereo speakers	• One-year parts and labor warranty • 12-hour weekday, 9-hour Saturday and Sunday toll-free phone support • No on-site service	A champ at handling brightness and contrast, but the overall image quality that this model supports is only middling.
• 30-inch, 1280-by-768-pixel screen • Supports 480i, 480p, 720p, 1080i input • OVI input, two component inputs • Two standard NTSC tuners	• Separate R, G, B color controls; no video presets • Detachable two-way stereo speakers • Upgradable tuner	• One-year parts and labor warranty • 9-hour weekday toll-free phone support • Free on-site service	This budget-priced set gets the job done, but image quality is flat; meager controls and lack of surround sound add to the disappointment.
• 32-inch, 1366-by-768-pixel screen • Supports 480i, 480p, 720p, 1080i input • HDMI input, one component input • Single standard NTSC tuner	• Gamma control, five video presets • Two-way stereo speakers	• One-year parts and labor warranty • 13-hour daily toll-free phone support • Free on-site service	The JVC falls short on image quality, lacks control over individual colors, and has fewer inputs than most others.

LG Electronics DU-30LZ30—has a built-in ATSC (Advanced Television Systems Committee) tuner, which is needed for decoding the digital television (including HDTV) signals that will be replacing NTSC in the next few years. The other models require third-party receivers (such as a cable, satellite, or other set-top box) to decode high-definition content.

Most of the sets that we reviewed for this article weigh about 50 pounds each, so wall mounting demands care—as well as the right hardware, which typically costs extra. Some models have detachable speakers that you can position away from the television or remove completely (if you want to mount the TV without them). Most of the sets have a virtual surround-sound mode, but you'll need to add speakers to get true surround sound from HD programs and DVD movies.

TOOLS FOR TESTING

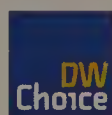
FOR OUR SIDE-BY-SIDE image-quality tests, we used professional-grade tools to adjust color temperature and to calibrate each set. Our panel of judges then viewed a selection of off-air high-definition and standard-definition programs and DVD movies, rating the units for color quality, detail, brightness and contrast, and overall impression. We also evaluated high-definition image and sound quality informally, using a live feed from the Voom high-definition satellite service, and we checked out DVD image and sound quality across component-video and analog-audio connections. And last, before calculating our final rankings, we factored in each unit's features, usability, and technical support (see dwfind.com/45836 for further details on how we test).

Whatever LCD set you decide on, take the time to check with several retail sources before you buy. With LCD TV prices in a period of flux, you'll have to shop around to get the best possible deal—but there should be plenty of bargains available after the holidays.



MITSUBISHI LT-3050

★★★★ \$3900



MITSUBISHI'S LT-3050 captured first place on the strength of superior image-quality scores and a solid set of features: If price is no object, this set—the most expensive we looked at—is the way to go.

A few of the LCD TVs in our roundup did a good job of rendering programs shot in broad daylight but struggled with shaded or dimly lit scenes; the Mitsubishi, however, excelled in displaying all types of lighting.

Though it lacks preset picture modes (such as movie, sports, and video game) the LT-3050 provides individual settings for both primary (red, green, and blue) and secondary (yellow, magenta, and cyan) colors, permitting precise calibration. Like most of the other models we saw, the LT-3050 remembers color and other image settings for each input type—digital, component video, and so on. You also get six picture format sizes: standard, expand, zoom, stretch, narrow, and wide.

This 30-inch set is the only model here with a height-adjustable stand (you can raise or lower it by up to 2 inches) and the only one with a small subwoofer integrated with a stereo sound system that has 13 watts total—fine for a small space, but in a larger area we'd prefer more power. On-screen menus and universal remote functions are relatively simple to use, and the comprehensive manual includes an index and a troubleshooting section.

SHARP AQUOS LC-32G4U

★★★★ \$3300

ONE OF TWO LCD TVs we tested that has 1366 by 768 resolution (JVC's LT-32X575 is the other; the rest have 1280 by 768 resolution), the 32-inch Sharp tilts and swivels slightly but has no height adjustment.

The set's dual analog tuners and all of its audio/video inputs and outputs are contained in an external box that attaches to the TV via a three-cable umbilical cord, so you don't have to get behind the TV to add or detach cables. But the box also takes up extra room on a table or shelf.

Elegantly designed, this set is chock-full of easy presets and has separate controls for adjusting hue, saturation, and value (brighter and darker) for levels of red, blue,



green, cyan, magenta, and yellow. The included PC Card slot lets you use a PC Card with an adapter for the media in your camera to view stills or MPEG videos.

The LC-32G4U comes with a pair of detachable two-way stereo speakers (10 watts each), an automatic sound equalizer, and virtual surround sound that significantly boosted the audio for concerts and movies.

The set's picture-quality scores on most of our tests, including brightness/contrast and DVD content, were about average. But in our standard-definition test, the Sharp ranked significantly below average. Still, if you don't mind making adjustments to get the best picture, this sleek TV has some of the top features in its class, along with excellent tech support. ►

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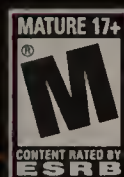


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SAMSUNG LT-P326W

★★★ \$2999

THE SAMSUNG LT-P326W provides top-notch controls for handling different types of content. Besides numerous color temperature choices, and preset audio and video modes, the set has Samsung's Digital Natural Image engine, which automatically enhances color, contrast, and detail.

You can tweak images by adjusting the individual red, green, and blue levels; the set's My Color Control function provides predefined and customizable settings. Applying the settings is easy and intuitive; they appear in three categories (Skin Tone, Green Grass, and Blue Sky). Other pluses: a control to match screen brightness to ambient light conditions, and HDMI input (for receiving both audio and video signals through one cable).

Unfortunately, this 32-inch LCD's performance scores tended to be average.

The LT-P326W's pair of two-way stereo speakers (10 watts each) and SRS TruSurround XT performed well in a small room during concerts and movies, but in a bigger area we'd want more power. The included six-band sound equalizer and subwoofer frequency controls go beyond what most competing sets provide.

The LT-P326W comes with an easy-to-use menu and universal remote, extensive documentation (including lengthy troubleshooting help), and generous technical support from Samsung.



LG ELECTRONICS DU-30LZ30

★★★ \$2400

LG ELECTRONICS' DU-30LZ30 is the only model we looked at that has an integrated ATSC digital tuner in addition to a standard analog NTSC TV tuner, meaning that it can receive over-the-air digital broadcasts without an additional set-top box.

This 30-inch LCD set received middling scores in most of our picture-quality assessment categories, but it ranked second in our tests for detail and standard-definition programs.

Its handsome black-and-silver cabinet has a convenient set of audio/video inputs on the side and numerous connections in back. Noteworthy features include a half-dozen audio and video presets for different types of content and picture formats with varied aspect ratios—all easily accessible via the remote. A sound system with two 15-watt two-way stereo speakers and built-in SRS TruSurround XT delivered musical tracks and action-film soundtracks with plenty of gusto for a den or a small living room.

The XD Engine image-enhancement system improved the brightness, contrast, detail, and color of varied content in our tests. A split-screen demo lets you compare shots with and without this option activated; but you can't save individual settings for input sources, nor can you adjust red, blue, and green levels separately.

Both the on-screen menus and the universal remote control are a breeze to use. Documentation includes a troubleshooting checklist. Another plus: LG's generous 24/7 toll-free telephone tech support.

VIEWSONIC N3000W

★★★ \$1800



AT 37.5 POUNDS, ViewSonic's N3000w is the lightest 30-inch set in this group (most are in the 50- to 60-pound range); and at \$1800, it's one of the least expensive. But it's no lightweight at delivering good picture quality, taking second-place honors in our color and DVD quality tests and scoring slightly above the mean in all other tests. Its low price and fine picture quality won the N3000w our DW Value award.

The usual rear audio/video ports are supplemented by easy-to-access composite video, RCA audio out, and mini-stereo



headphone ports on the right side. A pair of two-way stereo speakers (10 watts each) provide virtual surround sound; they did well at medium volume levels in the small simulated living room we use for testing. But we heard some distortion after upping the volume for a televised jazz festival.

The on-screen menu is easy to navigate, but you have to move it to a corner of the screen to see the effects of adjustments. There are no preset audio or video modes, and picture format options are limited to wide-screen and standard. You can't save individual settings for each input.

Though the N3000w's quick-start guide and other documentation are serviceable, they lack an index. The remote has dedicated buttons for each input (a plus); but unlike the remotes on most other TV sets, it can't control other equipment. ►

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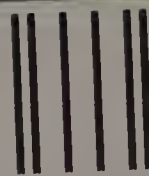
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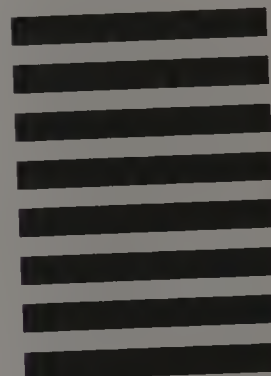
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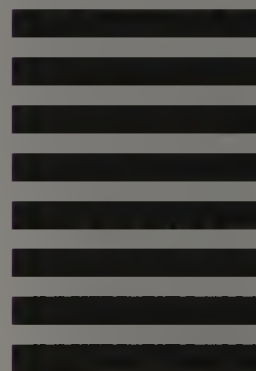
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■ Test Center | LCD HDTVs



PANASONIC TC-32LX20

★★★ \$3300

PANASONIC'S TC-32LX20 is one of the few sets here with an HDMI input, which receives video and audio signals through a single cable from another HDMI-enabled device (such as one of the newer set-top boxes or DVD players). This 32-inch model provides easy presets for video and audio modes and for aspect ratio. Advanced adjustments include gamma (for midtone brightness) and controls for making blacks darker and whites brighter.

Unfortunately, you can't control individual red, green, and blue levels to perform basic calibration, and there's no picture-in-picture feature either.

The set earned middling picture-quality scores on most of our tests, but it finished first in the group for brightness and contrast.

In addition to the usual video and audio connectors on the back, this model provides several extra inputs in front for plugging in a camcorder, a video game console, or the like. You also get slots for viewing images stored on SD (Secure Digital) Cards or on PC Card-based media adapters. A pair of side-mounted two-way stereo speakers (10 watts each), a sound equalizer, and virtual surround sound can project concerts and soundtracks effectively in small rooms.

The TC-32LX20's on-screen menu was frustrating at times, mostly because the finicky thumbpad on the universal remote often failed to respond to our selections. The documentation, which is satisfactory though a bit thin, lacks an index.

SYNTAX OLEVIA LT30HV

★★★ \$1500

THE LEAST-EXPENSIVE LCD we tested, Syntax's Olevia LT30HV is best suited for budget-conscious buyers willing to settle for mediocre performance and limited features to get a really low price. Though the set is far from unwatchable, its flat, lackluster images in most tests earned it the second-lowest overall picture-quality score, trailed only by JVC's LT-32X575.

This 30-inch model offers such features as a dual analog tuner (for viewing two channels at once), an array of audio/video inputs, and a built-in sound system (two 10-watt two-way stereo speakers). It's one of the few units that has detachable side-mounted speakers. Noticeably absent is a virtual surround-sound option (included with most sets), but you can attach a sub-



woofer (not included) via a line-out port.

The on-screen menu and remote control are simply designed and easy to use, but some features found in other models are missing. There's no single control for adjusting red, green, and blue color intensities simultaneously; and the tint and saturation controls work only with analog—not digital—video. The unit lacks audio and video presets (for movies, sports, and video games), and you can't save separate video settings for each input device (TV, DVD, or VCR). Documentation is rather slim, though it does include a glossary. And like the ViewSonic's, the Syntax's remote control can't operate other devices.



JVC LT-32X575

★★★ \$2600

A 32-INCH LCD, JVC's LT-32X575 boasts 1366 by 768 resolution, higher than most in this roundup. The LT-32X575's picture quality, however, left us cold. Rock-bottom scores for color quality and detail left this set the lowest-ranked TV overall.

The JVC's HDMI input can receive digital audio/video signals through a single cable. In addition to color temperature, display settings, aspect ratios, and noise reduction controls, this model has automatic options for dynamic gamma (which affects midtone brightness) and color management (saturation enhancement). These options, which, in keeping with our test protocol, we turned off for our juried tests, improved certain images—such as a nighttime scene in our *The Lord of the Rings: The Return of the King* DVD—during informal tests. You can't adjust red, green, and blue levels individually.

The two bottom-mounted two-way stereo speakers (10 watts each) would suffice in a small room; its virtual surround-sound mode enhanced concerts and soundtracks.

The LT-32X575 can tilt and rotate on its stand. Navigating its menus required a lot of scrolling through screens, but the universal remote was a snap to operate. Thorough documentation explains all features (including remote programming) and provides a troubleshooting list. Still, the set's mediocre image quality dragged it to the bottom of our overall rankings. ■

Freelance writer Richard Jantz lives in the San Francisco Bay Area.

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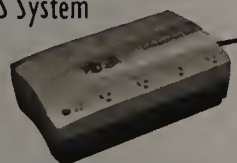
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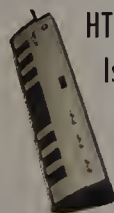
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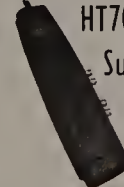
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- 3570 joule rating
- Isolated Filter Banks; metal housing
- 3-line coaxial (gold) surge protection
- 1-line tel/modem/network and 1-line tel/modem surge protection
- \$500,000 Insurance with Data Recovery Warranty

HT1010SAT3 Surge Suppressor



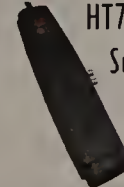
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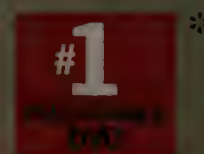
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AT THE 2004 World Cyber Games in San Francisco, the planet's best gamers faced off.

GAMERS GO PRO

CHAMPION GAMER
Guillaume Patry.



Move over, Shaq: These players face off for glory, fans, cash, and endorsement deals. Video games may never be the same.

ONCE UPON A TIME, some kids dreamed of becoming astronauts or firefighters when they grew up. But the generation that turned Atari, Nintendo, and Sega into household names had its own ambition: to be paid to sit around and play video games. Now, as adults, some people are living that dream.

Take 24-year-old Canadian pro gamer Guillaume "Grrr" Patry. He started playing the hugely popular Warcraft in 1999. He quickly

BY TIM GNATEK

became recognized as the best player in his hometown, and then in his province. When Patry discovered Starcraft, he convinced his father, Rejean, to bankroll his travel to a competition, where he won \$10,000. He'd joined the world of professional gaming.

"In order to make it," Patry says, "you have to play the right game and be willing to move where it's being played." At the moment, according to Patry, the only "right" games, where there's serious money to be made, are Counter-Strike, a first-person shooter (FPS) game based on the popular Half-Life; and Starcraft: Brood War, a real-time strategy (RTS) contest—his game.

As for the place to be, Korea, with the most developed gaming industry in the world, is it. Top professional gamers are as revered by Korean fans as stars of baseball or football are in the United States. In 2000, Patry moved from his native Québec to Seoul, South Korea, the hub of professional competitive video gaming.

DIVIDE AND CONQUER

MANY U.S. GAMERS play FPS games, but the oft-violent genre was banned in Korea for many years. As a result, many Korean players choose to play RTS games, such as Warcraft and Starcraft, or to slay dragons in role-playing games. In the United States, the size of the audience for games—and the amount of money involved in the game industry (\$28 billion in 2004, according to the International Council of Shopping Centers, a trade group)—is just starting to make headway against the audiences for TV and movies in the United States. In Korea, games are so overwhelmingly popular that a large segment of youth culture revolves around them. American teens may want their MTV, but Koreans prefer to watch Lineage, a role-playing game that is simulcast 24 hours a day on one of the three cable TV channels dedicated to round-the-clock game coverage.

"In order to make it, you have to play the right game, and be willing to move where it's being played."

GUILLAUME "GRRR" PATRY

Fast-paced—at times almost frenetic—RTS games like Starcraft stress a player's ability to keep track of dozens of events simultaneously, and to keep at least one step ahead of the opponent. Patry plays Starcraft like Kasparov plays chess.

Patry declines to disclose exactly how profitable the pro life has been, but he says that he lives comfortably on what he earns in competitions. "In Korea," he says, "the

top three players clear half a million dollars a year." And he ought to know: He has dominated Korean Starcraft leagues for nearly three years, most of that time as the top player in a highly competitive field. At the conclusion of the four-day World Cyber Games held in Seoul in 2003, for example, Patry took home an \$18,000 purse for winning the Starcraft bronze medal.

But Patry sees his career as a pro gamer winding down. He doesn't play as much as he used to. Back at the beginning of

GEAR OF THE GAMERS

THAT GAMERS DEMAND MORE out of their PCs goes without saying. But input devices like keyboards and mice are to PC gamers what Air Jordans are to hoopsters. To that end, the input device industry markets high-end gaming devices such as these:

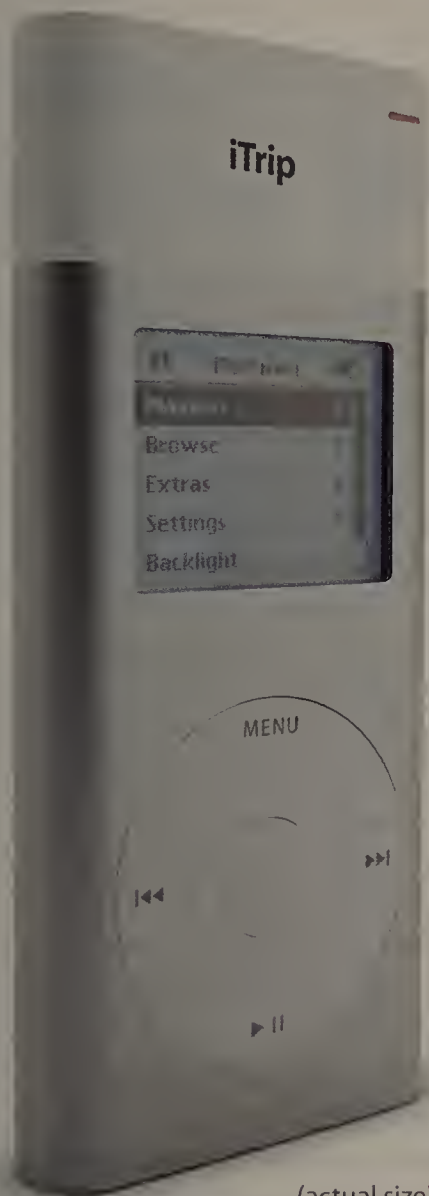
- **MICE** must permit precise aiming and speedy movement, so roller balls are out. The **Nyko Airflow** (find.digitalworld.com/45844) optical mouse keeps you cool by blowing air into your palm during heated competition. The **Razer Diamondback** (find.digitalworld.com/45842) offers 1600-dots-per-inch precision and a 16-bit data transfer rate—twice

that of most ordinary pointers. Logitech's **MX Laser** wireless mouse (find.digitalworld.com/45846) uses a laser that lets it work even on reflective or shiny surfaces, unlike other optical mice.

- **KEYBOARDS**, extremely important to PC gamers, come in a variety of shapes and sizes. Electroluminescent panels light the **Auravision EluminX** (find.digitalworld.com/45848) from within, so gamers can see the key caps in a darkened room. The **Ideazon ZBoard** (find.digitalworld.com/45850) lets gamers snap in customized keyboard modules that have the controls for particular games marked out.

- **MOUSE PADS**, too, have special demands in competitive play. Pro-gamer Fatal1ty designed the **FadPad**, an expansive 14-by-17-inch mousing surface, so he wouldn't lose valuable milliseconds retracking when his mouse reached the edge of a normal mouse pad. Other pads, like X-Ray's **Thunder 8** (find.digitalworld.com/45852) and Razer's **ExactMat XSpeed** (find.digitalworld.com/45854), offer gamers a firm surface with a lightly textured, slightly sparkly pattern that helps any optical mouse track movement better than it ever could on a chunk of foam.





(actual size)

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JONATHAN "FATAL1TY" WENDEL,
jack-of-all-games and now a PC
hardware designer and tester.

his gaming career, a 6-hour game day wasn't out of the ordinary. Today, at 22, he plays for only about 3 hours per day, and he believes that dulled reflexes hamper older players like himself.

Still, despite the ravages of age, he's always ready for serious competition—one of the benefits of playing every day.

COMPETITION HEATS UP

THE MOST RECENT major game competition was the 2004 World Cyber Games; players from 64 countries competed in it for a total of \$412,000 in prize money. But WCG isn't alone in conferring riches: QuakeCon 2004 doled out \$150,000 in prizes to top Quake III Arena players. The seven-year-old Cyberathlete Professional League hosts several big matches a year; its 2004 Cyberathlete Extreme Summer Championships distributed \$275,000 among the winners of five different FPS-game competitions. And the newest shootout, the Cyber X Games, awarded \$100,000 in 2004 to the top Counter-Strike team.

Winning prizes is just one way to make money as a gamer. If you're good enough, you can obtain lucrative corporate sponsorships or pen endorsement deals with companies that make products for the gamer market. That's exactly what 23-year-old Jonathan "Fatal1ty" (pronounced "fatality") Wendel did.

Fatal1ty (who prefers to be called by his in-game handle) might be called the Bo Jackson of e-gaming: He won championships three years in a row in three different games. This uncanny ability to excel at just about every first-person shooter game that he plays—Quake III Arena, Alien vs. Predator, and Unreal

"I made more than \$110,000 my first year as a pro gamer."

JONATHAN "FATAL1TY" WENDEL

Tournament 2003, to name a few—sets Fatal1ty apart.

Fatal1ty earned instant respect among the elite in 2000. At his first Quake III Arena competition, he swept a series of bouts against the top dozen players in the world, winning 18 matches in a row. Soon afterward, he signed on with his first professional sponsor, and his picture soon made its way onto the packaging for mice made by Razer.

"I made more than \$110,000 my first year as a pro gamer," Fatal1ty says. That doesn't include the value of the Ford Focus, tricked out with a custom engine and high-end stereo, he won. In addition to pursuing competition, he's recently begun designing Fatal1ty-brand PC components, scheduled to appear on store shelves in 2005.

In his spare time, Fatal1ty promotes the sport of competitive gaming by holding "shootouts," in which anyone who wants to can challenge him to a duel. Guess who wins. These shootouts also give him a chance to size up the competition; the next serious challenger could come from anywhere.

Like many professional gamers, Fatal1ty brings a good luck charm to every match: a stuffed tiger, inspired by the University of Missouri mascot. But don't let the stuffed animal atop his computer make you think that he's soft. His latest specialty is Doom 3. Last year, only weeks after the game's

release by Activision, he won the 2004 QuakeCon tournament—the first at which the new game was played competitively.

GET READY TO GO PRO

ALMOST ANYONE CAN try competitive gaming from home. All you need is an adequately fast computer, a broadband connection, quick fingers, and a taste for victory.

Many tournaments have regional divisions and online qualifying matches. Various amateur leagues, including the Team Warfare League (www.teamwarfare.com) and Online Gaming League (www.worldogl.com), let you sample the world of competitive online gaming. Hopefuls can learn important skills by watching archived recordings of matches, posted on league Web sites.

With enough talent and practice, you might make the short list for elite gaming competitions like the WCG. But even if you don't have what it takes to become a professional gamer, you can have a good time trying. ■

Tim Gnattek writes about technology for The New York Times and other national publications from his home near San Francisco.

THE Little Player That Could

E2go from APEX DIGITAL blazes new trails for personal media player enthusiasts

CONSUMERS EXPECT INNOVATION and value from market leaders—nothing less. And that is just what buyers will get in Apex Digital, Inc.'s new E2go Personal Media Player, a device that is simply like no other. In short, the E2go blows past everything else on the market in terms of value, ease of use, and exceptional audio and video features. It is the future of portable entertainment, and only Apex is bringing consumers the future right now.

Using the sleek and smart E2go, mobile entertainment aficionados can play back, record, and carry just about all of their media in a single, compact device that travels easily in a pocket or purse. Moreover, Apex designed this unique media player to give consumers what they want—namely, the ability to handle more than a dozen audio, video, and still image file types.

With its beefy 20-GB hard disk, the E2go lets users record, store, and play back up to 80 hours of video, 5000 songs, or more than 200,000 still images, depending upon file sizes. And don't worry about file formats. The E2go can store and play back files of more than a dozen popular types. For audio, these include MP3, WAV, WMA, LPCM, and ADPCM. For video, these include MPEG4, DivX 3.x-5.x, Motion JPEG, and WMV9. And for images, the compatible file types include JPEG, GIF, TIFF, and BMP.

RECORDS ON ITS OWN TO A SPACIOUS HARD DISK

Get this: The E2go records and encodes video on its own, with no intermediary device needed, digitizing and saving the recordings directly to the hard disk. The E2go's ultra-compact 1.8" hard disk drive minimizes weight, noise, and heat generation, while a snappy 3.5" LCD screen delivers crisp images. For audio, the E2go produces sound either through high-quality stereo earphones or its built-in speaker.

Another feature setting the E2go apart from all other media players is its ability to record and encode non-copy-protected video from standard video sources, like VCRs, PVRs, DVDs, and camcorders. This remarkable device also records voice notes, plays back images as a slide show with audio, and outputs video to a standard TV via an "AV out" connection. This means that



» **The E2go Personal Media Player: a huge step forward for mobile consumers.**

commuters, travelers, or carpoolers can use the E2go's recording capabilities to catch up on their TV viewing.

Transferring files to or from the E2go and a desktop or laptop computer is a breeze with its USB 2.0 connection. With the USB connection and the massive 20-GB hard drive, the E2go can double as a portable hard drive easily taken on the road. Another superb feature of the E2go is its user-removable/replaceable, rechargeable Li-Ion battery, which is as easy to change as the batteries in a digital camera. Other players require users to actually ship the player back to the factory when the time comes for a new battery (which any of these players will ultimately need).

Apex has a vision of a future rich in affordable, feature-laden entertainment products. The innovative E2go is an extension of that drive to give consumers the options and control they want over how and where they choose to watch or listen to their recorded media content.

Despite this cutting-edge innovation, Apex is continuously guided by the notion of providing high quality at a fair price. Small wonder Apex is the fastest-growing company in consumer electronics history.

■ *To learn more about the remarkable E2go Personal Media Player or about Apex, click now on www.apexdigitalinc.com.*

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Power for Your Portable

From solar vests to hand-cranked chargers, the future of alternative gadget power is here.

BY JAMES A. MARTIN

THE WINTER SKY IS an intense blue, the powdery snow a brilliant white. You are ready to slalom down an awesome ski slope, with an adrenaline-pumping playlist queued up on your MP3 player. But just as you're getting ready to shove off, your music player's battery gives out.

Several words come to mind, only one of which is printable here: *Bummer*.

But the fun doesn't have to end. You can keep your gadgets going even when their batteries are exhausted and you're far from a wall socket. At least, that's the claim behind five portable power products I tested. Here's how they deliver.

Charge everything: Mobility Electronics' **IGo EverywherePower 3500** (\$70, dwfind.com/45606) earns my vote for best all-around gadget charger/power adapter for its versatility and compactness. You can easily charge PDAs, cell phones, digital cameras, and MP3 players—up to two at a time. If you want to charge a notebook, however, you have to step up to the EverywherePower 7500, which costs twice as much. The 3500 plugs into a wall (or into a car or airplane power socket), which means that you can juice your gadgets on the go. I keep a charger permanently stowed in my airplane carry-on bag, so I don't have to gather power cords when packing for a trip. Weight: just 5 ounces.

The IGo device uses a system of power

"tips," sold for about \$10 each. Each tip is designed to connect a particular gadget, such as an HP IPaq, to the charger. When you buy a new gadget, just buy a new tip.

Wear your power: Though it sounds sort of like a recently discovered alternative set of planets, the **Solar ScotteVest System** (dwfind.com/45586) is actually a coat with removable zippered sleeves, 42 pockets for gadgets, and a mesh lining that lets you run connector cables and earbud cords inside. But the coolest (or dorkiest, depending on your viewpoint) feature is its detachable solar panel.

The solar panel attaches to the vest's back with Velcro. A power cord runs from the panel through a discreet opening in

the vest's back and connects to a removable, rechargeable battery inside. Your gadgets, in turn, connect to the battery via a USB cable. You're not limited to charging USB devices, however. Several companies, such as **Zip-Linq** (www.ziplinq.com), make cables that can connect a non-USB device, such as a cell phone, to a computer's USB port for charging purposes. The Solar ScotteVest battery's USB port outputs 5 volts of power, enough for a PDA or digital camera but too little for a laptop, a camcorder, or any other power-hungry device. You can charge the battery with the solar panel, and then leave the panel at home. If you want to continually power your devices on the go, however, you ►

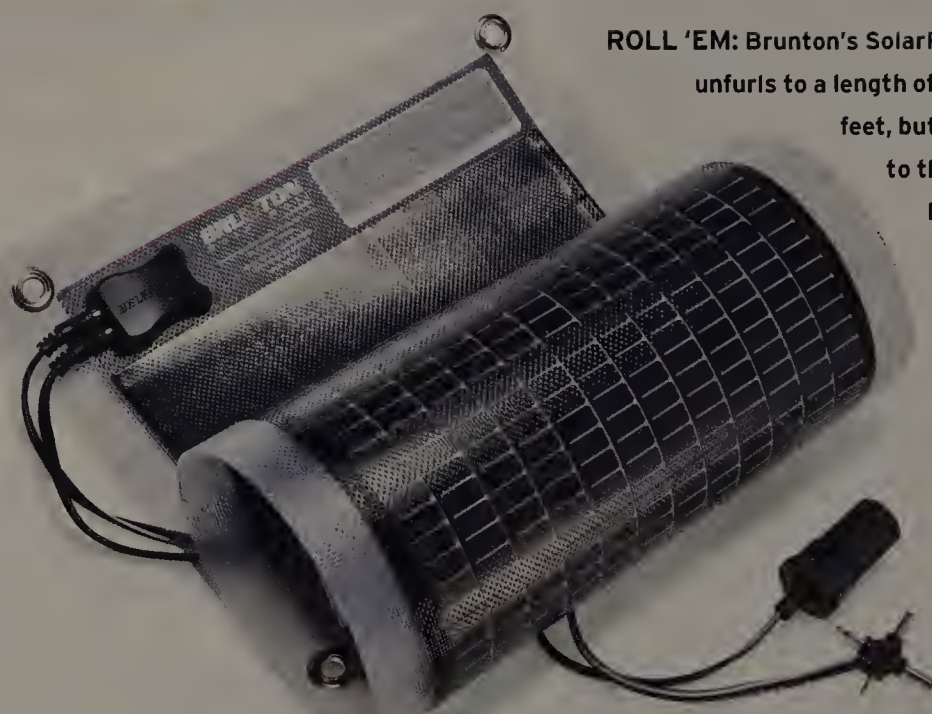


Jim's Travel Log

Picture Imperfect Apple's iPod Photo (dwfind.com/45712) sure looks cool. But you can only import pictures by putting them on your computer and syncing it with the iPod Photo. Also, the iPod Photo is incompatible with the awesome, essential Altec Lansing InMotion and InMotion IM3 speaker systems (dwfind.com/44526). If it weren't for those two gotchas, I'd buy an iPod Photo *thisquick*.

Movie Reviews to Go I've been a loyal reader of Leonard Maltin's annual movie guide

since I was a movie-mad teenager. Maltin's 2005 guide (\$20, dwfind.com/45714) is, for the first time, available for both Palm and Pocket PC devices. You can quickly search capsule movie reviews by title, actor, and other criteria. Free regular downloads include a calendar of upcoming DVD releases. But here's the irony: While I can now easily take Maltin's guide to the video store, the store—faced with competition from Netflix, video on demand, and Internet movie downloads—may not be around much longer.



ROLL 'EM: Brunton's SolarRoll 14 unfurls to a length of nearly 5 feet, but it collapses to the size of a beach towel.

will simply have to wear the solar panel outdoors during daylight hours.

At \$535, the Solar ScotteVest System is costly, though the company offers some less-expensive solar panel/vest alternatives. It's heavy and warm, with a waterproof exterior, so it might be useful for gadget-toting ski bums, bicyclists, and hikers. The battery fully recharged my anemic digital camera within 30 minutes (about the same length of time the camera takes to charge via AC power).

I couldn't charge my iPod or iPod Mini, however. Evidently, Apple's MP3 players differ from most devices in how they receive power via USB. A solution to the problem is in the works, but at press time no one could say exactly when the fix would arrive or how much it would cost.

Keep on rolling: As its name implies, Brunton's **SolarRoll 14** (dwfind.com/45588) is a solar panel that rolls up for storage. Measuring 12 inches wide by 57 inches long, the SolarRoll provides 14 watts of power and can power or recharge laptops, digital cameras, cell phones, and other electronic gadgets.

But the SolarRoll 14 isn't all sunshine, either. First of all, you need to have a car power adapter for each device you want to connect to the solar panel. Car adapters are available for most gadgets, but their cost adds to the SolarRoll's already daunting \$399 price. Second, the panel doesn't store power (as the Solar ScotteVest System's battery does). So when the roll isn't

exposed to daylight, you'll have to hope that your devices' batteries hold out. Still, if you regularly spend long weekends camping—and any weekend spent camping seems long to me—the SolarRoll may be an option worth considering.

Get a booster: From now on, I intend to keep a **Cellboost** (www.cellboost.com) in my messenger bag. Resembling a slim, silvery cigarette lighter, the disposable battery/charger gave my Sony Ericsson T616 phone an additional 60 minutes of cell phone talk and standby time. Cellboost chargers are available for most cell phone models. They're easy to find—I've seen them in grocery stores. And they're inexpensive; I bought a package of two for \$10 at Amazon.com. Only downside: Usually, the earbud and power ports are next to each other on a cell phone's base; so when Cellboost is connected, you can't plug in earbuds.

Get cranked: About 100 years ago, when you wanted to make a call, you turned a crank on your phone to get the operator's attention. Now, when you want to make a call on a dead cell phone, you can turn the crank on the **SideWinder Charger** (\$25, dwfind.com/45592).

Turn its crank for 2 minutes, and the SideWinder generates roughly 6 minutes of talk time on Nokia, Motorola, Audiovox, Kyocera, and Sony Ericsson cell phones. The SideWinder successfully resuscitated an old Nokia cell phone that hadn't been charged in months, and it added a few

FUEL FOR THOUGHT

THE ACTIVE INGREDIENT in windshield wiper fluid could soon change your life.

I'm not talking about cleaning bird doo off your windshield so you don't go careening off a cliff. I'm talking about using portable fuel cells, which are now under development as a power source for laptops, PDAs, cell phones, and other portable electronics.

Fuel cells generate power from the chemical reaction between a hydrogen-containing fuel and oxygen. Among many hydrogen-rich fuels is methanol, a wood alcohol often used in windshield wiper fluid. Methanol is the hydrogen source of choice for most portable fuel cell products currently being developed by Hitachi, Toshiba, Fujitsu, and others.

Your gadgets could run for hours (if not days) longer than they can on available batteries, according to **Fuel Cells 2000** (www.fuelcells.org). Sounds awesome—except when I imagine airlines permitting cell phone use in flight, and fuel cell technology enabling the Talkative Tom next to me to blather non-stop from San Francisco to New York.

Though methanol is flammable, advocates of the technology say fuel cells are safe because they typically use less than 24 percent methanol mixed with water. Hence, they present no more danger on an aircraft than, say, a mini-bottle of vodka.

Laptops should be the first target market. The current best guess is that portable fuel cell cartridges will begin appearing later this year but won't be widely available until 2006.

minutes of talk time to my Sony Ericsson phone. On the other hand, 2 minutes of dedicated crank turning feels more like 2 hours, and the noise that it makes prevents you from talking while turning. ■

James A. Martin writes PC World's Mobile Computing newsletter.



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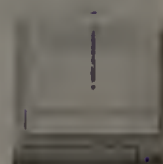
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KL- I915A



KL- I915B

Is Now the Time for an HDTV? Before you start shopping, ask yourself a few probing questions. BY ROBERTA FURGER

LAST SUMMER, my husband and I took a very deep breath and bought a new house. As we unpacked, it became clear that our old stuff looked decidedly out-of-date in our new digs. One of the first items we decided to upgrade was our eight-year-old TV set. Picking a new TV, we figured, was easier than agreeing on the size and style of a dining room set. Boy, were we wrong.

One of the most complicated components of the buying decision is the ques-

what you need to consider before you head to the store to buy your next TV.

Are your favorite shows available in HD?

Although most network prime-time programming is now available in high-def, the number of shows varies greatly by market. Check with sources such as TitanTV.com or www.dtv.gov (the Federal Trade Commission's site on digital television) to find out which of the shows you watch are available in HD.

enhanced-definition TVs—an LCD and a flat-screen tube set—for less than \$450, but that isn't a big difference in price, and an EDTV won't give you the eye-popping image of an HDTV. So if you can stretch your budget a bit, do it.

If you've got a little more to spend on your next purchase, HDTV might be an option—if you're willing to be flexible on such features as screen size or display type. For example, during my shopping expeditions I found several 30- and 32-inch HDTV-ready CRT sets for as little as \$700. Or you could spend approximately the same amount of money on a 17- to 20-inch HDTV-ready LCD monitor. The question to ask yourself: Will you be happy with a smaller screen?

Are you looking for a specific type of TV?

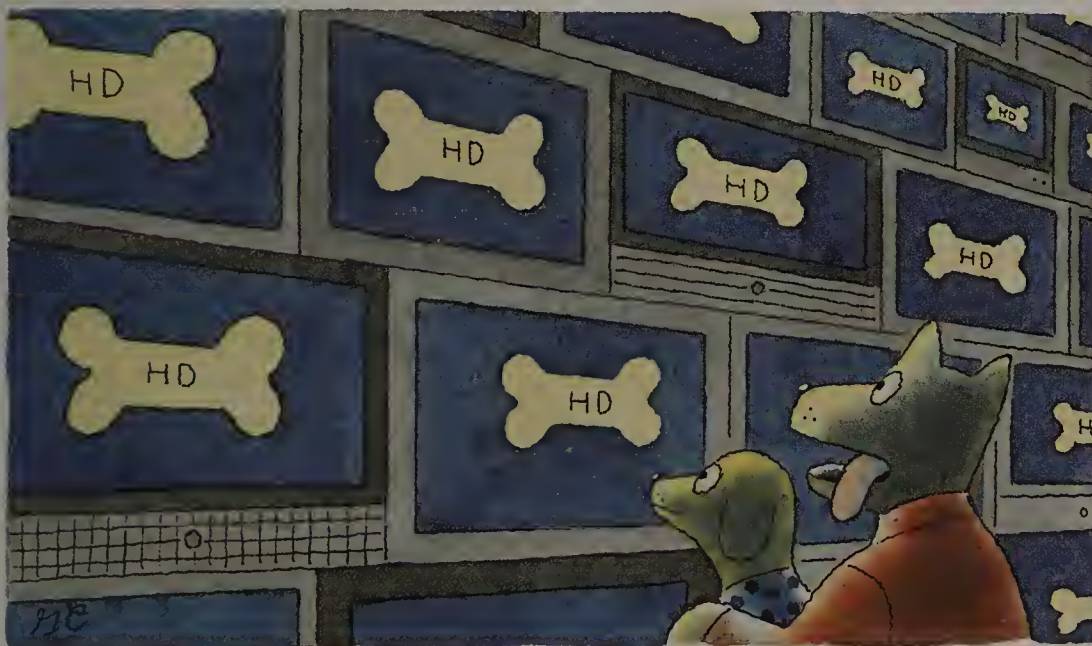
If you already know you want a wide-screen LCD or plasma display, the decision about whether to upgrade to HDTV may be made for you. The reason: Many of these sets with screens bigger than 32 inches (and many of the smaller ones, too) have HDTV capability.

CRTs are big and bulky, but for as little as \$800 you could be watching your favorite football team on a 36-inch analog set. However, for the same price, you could easily get a 32-inch HDTV set. That's a compromise I'd make.

A FINAL WORD

DECIDING WHETHER to upgrade to the newest technology is often framed in terms of a yes-or-no question. But life is rarely that simple. Soon you may not have to worry about choosing HDTV, because every new set will have it, but for now it still requires consideration. ■

Roberta Furger writes, shops, and watches TV in Oakland.



tion of whether to make the big leap to HDTV—the highest-quality (and highest-priced) video alternative around. Anyone who looks at an HDTV will want one, but it's a pricey addition to the living room.

Of course, you don't *have* to rush out and buy an HDTV set. Although Congress has mandated a switch from analog broadcasts to digital ones (see dwfind.com/45824), the conversion is at least two years away from completion. And even after all analog broadcasts end, you'll be able to get an inexpensive adapter that will permit you to still see your favorite shows on your low-definition set.

But what about those of us who *are* in the market for a new television? Here's

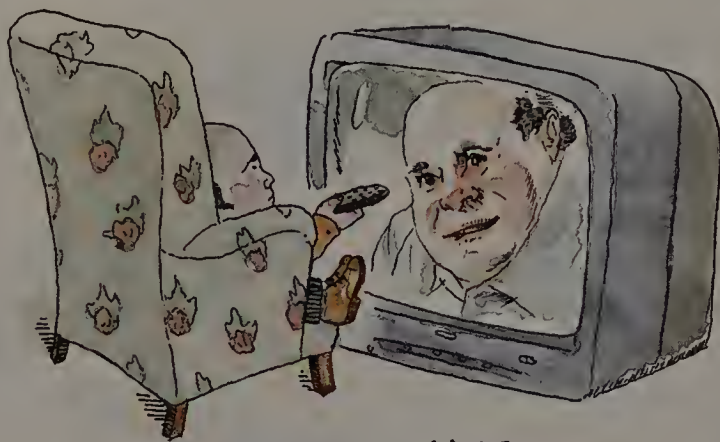
Before investing in the new technology, think, too, about the type of TV shows you typically watch. If you're a sports fan or movie buff, you're in for a real treat with HDTV, since that's where the ultrafine image quality and the wide-screen display format are really noticeable. But if your weekly TV fare consists of *Seinfeld* reruns and late nights with Leno, then the enhanced image quality may be overkill.

Do you care more about price than features?

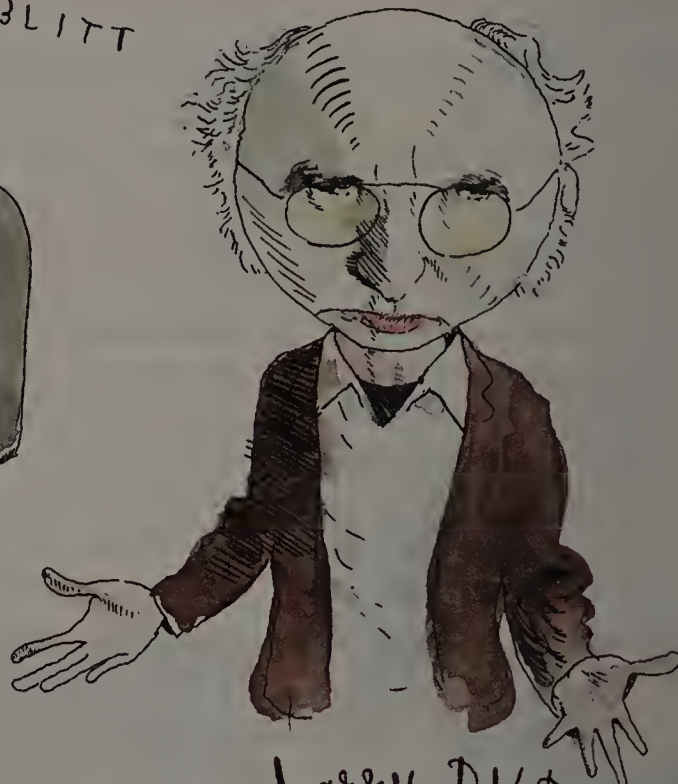
If your TV budget is less than \$500, then an HDTV set probably isn't in your immediate future. The least-expensive HDTV-ready television I found was a 27-inch flat-faced tube set by Mitsubishi for \$522. I encountered

Big-Name Technology

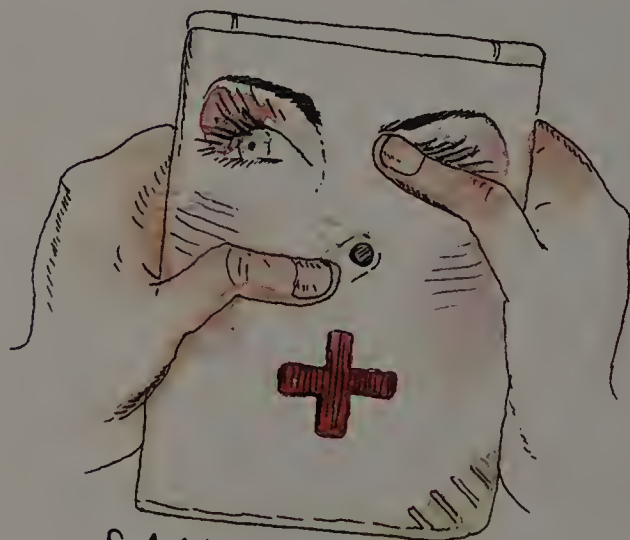
BY B. BLITT



Danny DeTIVO



Larry DVD



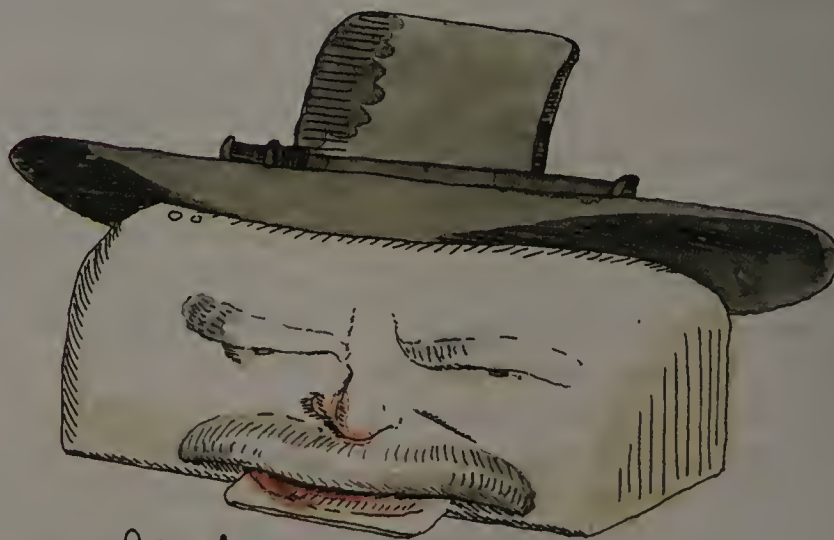
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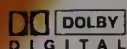
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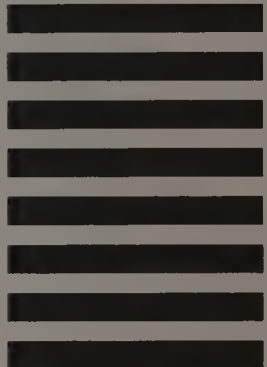
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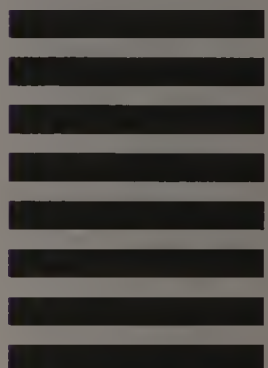
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Watch out, Internet Explorer and Google: A pack of powerful browsers and search engines are gunning for you. We rate 45 tools—and crown a new champion browser.

THERE'S SOMETHING NEW on the Web every second, but most people have been using the same old browser and search sites for as long as they can remember. We put the latest versions of five browsers, along with

three shells for Microsoft's long-in-the-tooth Internet Explorer, through their paces, and we took a fresh look at your search options, whether you want to find the latest news, the best info, or the lowest prices. ►

BY SCOTT SPANBAUER AND STEVE BASS





The Bottom Line: Eight Options for Browsing

YOU AREN'T using the best browser. At least, if you're like about 90 percent of Web users, you aren't. Firefox, the new kid on the block, is safer and livelier, and it offers a better Web experience than any other browser out there—and not just because Microsoft has made a mess of market-leader Internet Explorer.

We tested IE and four of its strongest competitors—the initial Firefox release, Mozilla 1.7.3, Netscape 7.2, and Opera 7.54—for features, ease of use, and Web site compatibility, to see which makes the best alternative to Internet Explorer. And for an alternative to the alternatives, we

looked at three programs that extend IE, adding features and enhancing security. All of these tools are priced just right at zero dollars each (for personal use, and in Opera's case if you don't mind ads). Our Best Bet is the Mozilla Foundation's upstart, open-source Firefox for its fast, simple, and secure approach to the Web.

Mozilla Foundation Firefox

4.5MB ★★★★★

Best BET THE MOZILLA FOUNDATION'S new Firefox browser is speedier, trimmer, less cluttered, and more modular than the separated-at-birth Mozilla and Netscape browsers. It's cleaner than Opera's free browser (ad-free Opera costs \$39)—and safer than IE.

Firefox maintains its slimness without forfeiting key features that are available in competing browsers. In addition to offering tabbed browsing (see **FIGURE 1**), the newcomer blocks pop-ups, types log-in names and passwords for you, and lets you wipe out your personal browsing history, cookies, and cache to keep snooping roommates, bosses, and kids out of your private business. It stays lean by spinning off anything that isn't a core browsing feature into one of tons of optional add-ons that you can get through the Firefox Web site (find.pcworld.com/45708), or into a

stand-alone Mozilla Foundation program.

Like the other browsers we tested, Firefox couldn't automate the log-in process at absolutely every Web site we visited. But although Firefox couldn't log us in to the Bank of America credit card site (one that also stymied Internet Explorer, Mozilla, Netscape, and Opera), it managed just fine at the bank's mortgage site. (Opera was the only other browser able to log onto the mortgage site.)

Firefox, though, was the only browser we tested to make an outright page-rendering error, causing several elements on the Slashdot.org Web site to overlap each other. And like every other alternative browser, Firefox simply won't work with such IE-only sites as Microsoft's Windows Update and MSNBC.com. But since uninstalling Internet Explorer is either impossible or more trouble than it's worth, depending on who you ask, that isn't the end of the world. You can have your Firefox and your Internet Explorer too. find.pcworld.com/45706

Opera 7.54

3.6MB ★★★★★

OPERA IS THE ONLY one of the Windows Web browsers that isn't free: You either pay \$39 or use the ad-supported edition, which places a banner ad at the top of the browser window. The ad doesn't get in the way of browsing, but many of the ads are animated with flashing or blinking text. Otherwise, Opera is stable, fast, and feature-rich, offering tabbed browsing, password management, form filling, pop-up blocking, an RSS news feed reader, and integrated e-mail and newsgroups.

Finding and enabling Opera's settings isn't always easy; pop-up blocking is listed under Skin/Windows in Opera's Preferences dialog box, for example. Fortunately the browser stashes its most important settings—including pop-up controls—in a handy Quick Preferences menu off the Tools menu (see **FIGURE 2** on page 69).

In our testing, Opera managed to log us in automatically at several financial Web sites where the other browsers could not. However, Opera displayed a serious flaw

UNIVERSAL IM

Inside Instant Messaging

FOR MOST MESSAGES, e-mail's just dandy. But for those quick, respond-to-me-now back and forths, such as whenever I have to tell my editor I'm going to miss another deadline or I want to ask my wife out to dinner, *nothing* beats instant messaging.

A slew of free universal IM clients are available for the picking. All work with the major chat services—AOL Instant Messenger, ICQ, MSN Messenger, and Yahoo Messenger—which currently freeze out each other (with the exception of AIM and ICQ). At the top of the list is the one I use: Trillian, from Cerulean Studios (find.pcworld.com/45772). Trillian isn't new, but the version you'll be able to download by the time you read this allows messaging and file sharing over local networks without using a server. It also permits you to have both video chat and CD-quality voice chat with people using any of the IM clients listed above. Another hot new universal chat tool is Qnext; go to find.pcworld.com/45778 to get your copy. And if you're an IM fanatic (as I am), log on to BigBlueBall (www.bigblueball.com) or Instant Messaging Planet (www.instantmessagingplanet.com) for the latest news on everything IM.

—Steve Bass

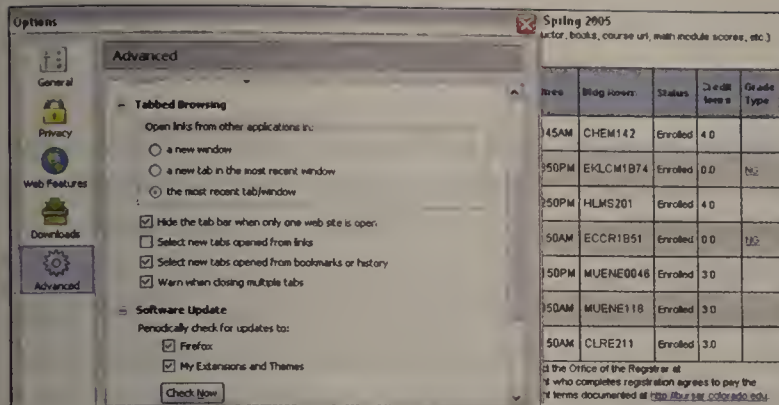


FIGURE 1: Keep tabs on many sites at once via Firefox's tabs.

on two Web sites where it failed to recognize ordinary-looking links that employed JavaScript. You may want to keep another browser close at hand in case you run into similar problems during your Opera browsing. find.pcworld.com/45722

pable and less buggy than its predecessors. But somewhere along the way, too many cooks spoiled the browser. Mozilla's innumerable options, features, and modules may satisfy inveterate tweekers, or people who simply can't live without

Mozilla Foundation Mozilla 1.7.3

12.1MB ★★★★★

MOZILLA STARTED as a rewrite of a rewrite of Netscape's venerable Communicator Suite, and it is certainly more ca-

fine-grained control over their browser's AutoComplete behavior. However, if you are looking for a fast, straightforward, secure alternative to Internet Explorer, choose Firefox instead.

Mozilla is equal to most key Web tasks, including log-in and password management, form filling, pop-up blocking, and cookie crushing. And while the program's e-mail and Web authoring programs are hardly awe-inspiring, they do the job.

Though Mozilla couldn't find the log-in and password fields at the Bank of America sites we tested, it fared well at almost every other site we tried (none of the ►

A SAFER WEB

Browser Wars II: Firefox's Grassroots Cure for Internet Insecurity

THERE'S A NEW CHALLENGER for the browser crown, offering security the champ can't match.

Microsoft appeared to put a resounding end to the browser wars back in the late 1990s by integrating the free Internet Explorer with Windows. No browser has put a dent in IE's dominance since then, but the tide may be turning. And the browser king's Achilles' heel could be its close ties to Windows.

The nonprofit Mozilla Foundation, which hopes to address IE's inherent security flaws, oversees the development of the Mozilla browser. The group was founded in 2003 with financial support from AOL's Netscape division, but it relies on contributions of work and money from corporations and individuals. The group's project (see find.pcworld.com/45868) produced a faster, smaller browser: Firefox.

Mozilla Foundation chief technologist Brendan Eich says IE's security problems run deep down to its Windows roots. IE is "the target of choice, and it's overintegrated with Windows," says Eich, who wrote the JavaScript scripting language for the original Netscape browser in the mid-1990s. For example, by default IE allows sites on your "trusted" list to start downloads automatically, but spoofing (altering) this list is relatively easy. "There are so many holes in IE that giving it the power to do automatic downloads is a bad idea," Eich says.

Firefox benefits from the Mozilla Foundation's hundreds of volunteer programmers, testers, and contributors, who poke around the browser's program code to uncover and publicize flaws and possible breaches. The foundation even offers a bounty of \$500 per bug,



BRENDAN EICH of the Mozilla Foundation.

and it promises to have patches ready in one or two days in most cases, according to Eich. Compare that with the weekly or monthly IE security updates Microsoft posts on the Windows Update site.

But their contributions go far beyond security. "There are so many users and use cases, you don't want to leave anyone out," according to Eich. "You want to have this thriving developer community," Eich says, "to let their creativity go wild."

—Dennis O'Reilly and Scott Spanbauer

browsers could automate log-ins on the main pages at Fidelity.com or Gmail at Google.com. And while Mozilla can't impersonate IE at sites that require Microsoft's browser, fewer and fewer such sites exist. find.pcworld.com/45710

Microsoft Internet Explorer

★★★★☆

NOW BOGGED DOWN IN the nearly interminable task of updating Windows, Microsoft has let its seasoned soldier languish behind the lines, where it is presumably out behind the ammo dump, shooting off expired rounds at beer cans.

While IE has enjoyed its ubiquity, competitors have added key features like pop-up blocking (now part of IE via Windows XP Service Pack 2) and the ability to open, view, and bookmark multiple Web sites in a single browser window.

More important, the steady increase in Internet-based viruses, worms, browser hijackings, and other attacks has made browser security a daily crisis for millions. Though Microsoft has steadily bricked up the gaping security holes in Internet Explorer (notably via XP's SP2), the company refuses to abandon its browser's inherently exploitable ActiveX technolo-

gy. As Windows users come to realize that the pop-ups, unwanted toolbars, and spyware bogging down their systems are slipping in through ActiveX's permeable security, they are switching to alternative browsers in significant numbers, something they haven't done since IE made browsing free nearly ten years ago.

So why stick with IE? Since nine out of ten people browsing use it, Web developers create sites to work well in IE, and some (including Microsoft's own Windows Update site) work only with that browser. Also, some big sites—and many company intranets—are designed using proprietary IE extensions, so they may not function properly in another browser.

Still, while size is important, it's not everything. Just ask Goliath.

NEWS TO YOU

RSS Made Simpler

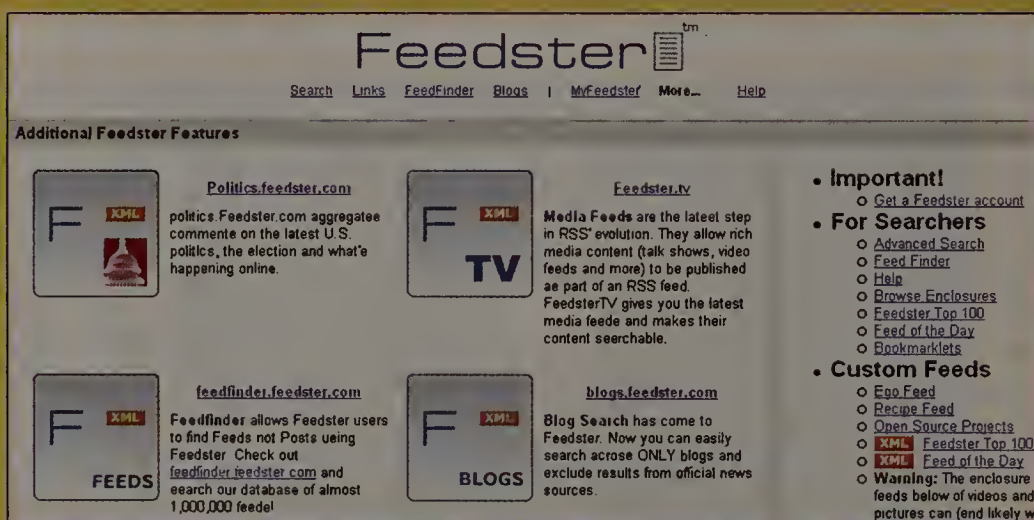


FIGURE 3: Feedster makes it easy to sign up for RSS news feeds.

SIGNING UP FOR RSS FEEDS CAN BE A HASSLE. The easiest way to start is with the beta reader built into Yahoo's home page. If you already have a Yahoo account, head for find.pcworld.com/45764 and click the *Add it* button. (Sign up for a Yahoo account at www.yahoo.com.) Next, click the *Add Content* link (usually near the top left), and type, say, **PC World** into the Find Content field. Click one of the *Add* buttons, and then *Finished*. When the page refreshes, you'll see your new RSS module. If you encounter any problems, check Yahoo's RSS FAQ (find.pcworld.com/45766). Be sure to start with a manageable number of feed sites and items per site.

An alternative to Yahoo for RSS feeds is the Desktop Sidebar (www.desktopsidebar.com), a fun, free tool that's not only an RSS reader but also a super desktop utility. The program features a media player, an image manager, a calendar, an appointment reminder, a quick note-taker, and several other handy applets. Like Windows' own taskbar, the Desktop Sidebar hides when it's not in use.

If you're wondering where to find RSS feeds, Feedster.com (you just have to love the name) is the spot to look (see FIGURE 3). Start at find.pcworld.com/45768 to home in on political, TV, or blog feeds. If you still can't find what you're looking for, click the Feedfinder link near the top of the page to search nearly 1 million RSS feeds. —Steve Bass

Netscape Communications Netscape 7.2

24.2MB (with Sun Java 2) ★★★★★

IF MOZILLA IS THE HOME-GROWN, salt-of-the-earth browser of the people, Netscape is its city cousin, crafted with one primary objective: to steer you toward other Netscape or America Online products and services. Netscape is based on the same basic code as the Mozilla browser but adds elements that serve parent company America Online, including AOL Instant Messenger (in place of Mozilla's AIM-compatible Chatzilla) and the Weather Channel's Desktop Weather utility. The Netscape toolbar offers links to Netscape online services and some browser settings, and the pop-up blocker comes preconfigured for your inconvenience to allow a list of more than a dozen Netscape and AOL sites to slip through.

Once you disable or remove its unwanted features and settings promoting AOL, Netscape is nearly identical to the Mozilla suite, including both browsers' Mail & News and Composer modules. They also performed identically in our testing of surfing compatibility. All of the bundled froufrou, however, makes Netscape's download twice as big as Mozilla's, topping 24MB. Unless you're excited about receiving all of the Netscape/AOL special

offers, you're probably better off choosing any one of the other browsers reviewed here. find.pcworld.com/45718

INTERNET EXPLORER SHELLS

THESE THREE PROGRAMS turn Internet Explorer into the browser that it could be if Microsoft were interested in updating its venerable product. By repackaging and augmenting IE's own features with tabbed multiple windows and other innovations that are already de rigueur in other browsers, they can make standing by your old faithful program easier.

Avant Force Avant Browser 10

1.1MB ★★★★★☆

AVANT BROWSER and Maxthon (see below) are virtually clones, with a few minor differences that could make one or the other more appealing to you. As with other browsers, be ready to reconfigure Avant's interface to reflect your version of Web reality. For some reason, Avant's window tabs show up at the bottom of the screen by default; things felt right once we dragged the tab bar to the top of the

this row cries out to be nearer the main navigation buttons at the top left.

In addition to blocking ads, pop-ups, and ActiveX controls, Avant lets you erase your browsing history and other tracks, and bookmark groups of tabbed windows. It also serves as an RSS reader, complete with dozens of feeds (see **FIGURE 4**). Not surprisingly, Avant Browser's log-in automation and site compatibility closely mirror those of IE. find.pcworld.com/45726

Mysoft Technology Maxthon 1.1

1.8MB ★★★★★☆

MAXTHON TRANSFORMS the Ubiquitous One (IE) into a tabbed browser bristling with toolbars and utilities. Like Avant Browser, this IE shell blocks ads, pop-ups, and ActiveX controls, and its privacy tool makes it easy to

erase your Internet cache, cookies, and browsing and search history. Maxthon gives you lots of control over whether and how new Web pages open in new tabs; and, like Firefox and Mozilla, the program lets you bookmark sets of tabbed Web pages so that you can open them all at once. You can also close open sites by domain or by screen position—all those to the right or to the left of your current position. Even if you turn off many of its bells and whistles,

these core features make Maxthon useful for anyone who continues to rely on Internet Explorer for their browsing.

Like Avant Browser, Maxthon had a few compatibility issues with some of our test Web sites. However, if all you want is to

fill a few of Internet Explorer's feature gaps, Maxthon could be just what you need. find.pcworld.com/45728

Stilessoft NetCaptor Personal Edition 7.5.3

1MB ★★★★★☆

IF THE INTERFACES of the Avant Browser and Maxthon IE replacements are a bit too busy for you, NetCaptor may be more your style. The program looks a lot like plain-vanilla Internet Explorer, tacking on only a few unimpressive interface flourishes and toolbars. But NetCaptor does add two indispensable features: tabbed browsing and the ability to bookmark groups of tabbed pages. You can even e-mail these groups to other NetCaptor users. The program defaults to lining up Web page tabs at the bottom of the screen, just as Avant Browser does; switching the tabs back to the top of the browser's window requires a trip to its configuration settings, as well as a program restart. The smallest enhancement to IE of the three shells we reviewed, NetCaptor's two-trick fix may keep the alternative-averse from switching to Firefox. find.pcworld.com/45730

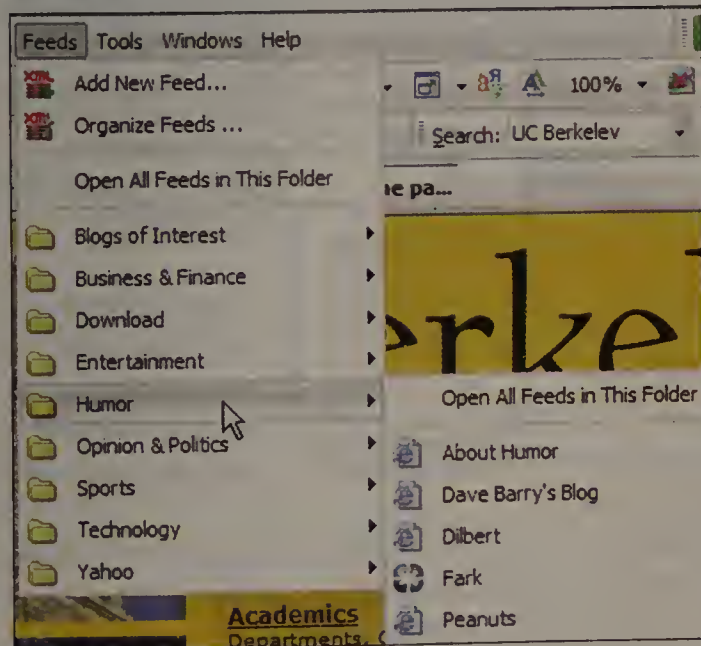


FIGURE 4: The Avant browser IE shell lets you import RSS feeds in various categories from a drop-down menu.

window. We also dragged and dropped other interface elements to their rightful places. For example, the browser's handy row of buttons for navigating among tabs and managing them appears in the top-right corner of the screen by default, but

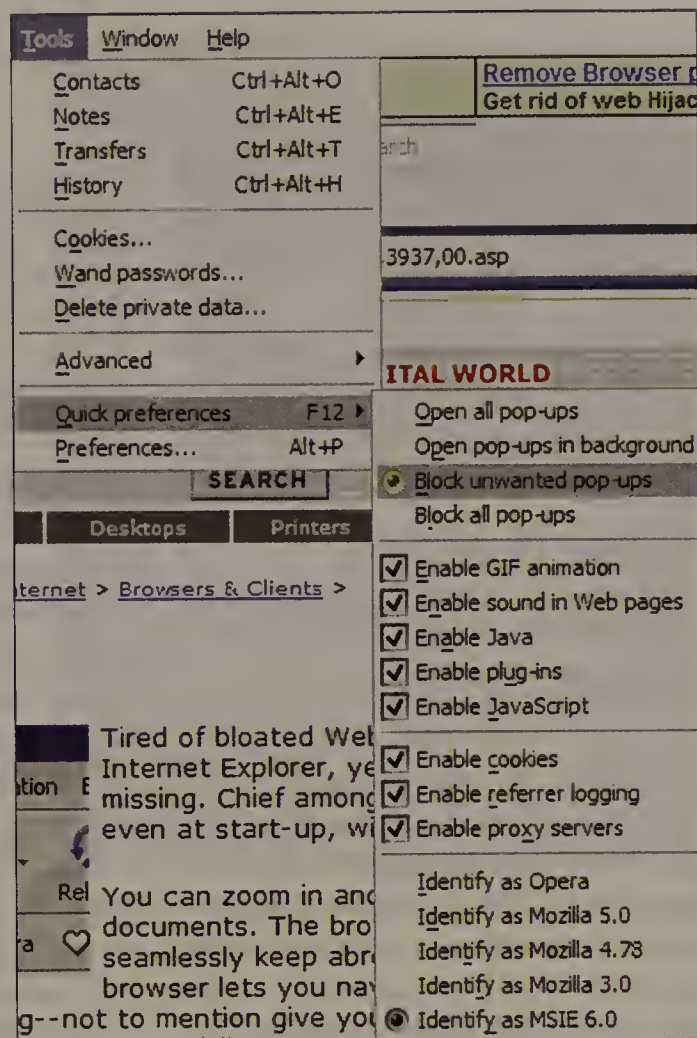


FIGURE 2: Pop-up blocking and other common controls are just two clicks away when you use the Opera browser.



New Names Shake Up Web Searching

LOOK OUT, Google. Make way, Jeeves. The Internet is evolving—and the way people use it is changing as well. Amazon's A9.com, for example, lets you probe the contents of books. And Craigslist.org gives you a way to get personal on a very local level. I scoured the Web, asked the advice of search mavens, and spent endless hours snooping deep into Internet sites of all sorts to find the coolest, most searchable spots on the Web.

KEEP IT LOCAL

Yahoo Local: Say you need a neighborhood PC repair shop or a dry cleaner. Yahoo Local (local.yahoo.com) lets you search within a mile of your home—or up to 50 miles away. You can save your location preferences and use a drop-down menu to repeat a recent search around town, or in a city you visit often. Broaden the search area with a few clicks, or sort the results by name or distance from an address, city, or zip code. You can view the search results on a map that highlights their location and provides even more information (see **FIGURE 5**).

Chowhound: Whenever I travel, I worry that I'll walk into the worst restaurant in town. I'm not even sure I trust my own local newspaper reviews. That's why I rely on Chowhound (www.chowhound.com), where the area locals undoubtedly have the last word. Whether you're looking for the best barbecue in Birmingham or top-notch sushi in Seattle, Chowhound's experts clue you in to the best of the local dives—and the eateries you should avoid.

Craigslist: If you're ready to get *really* local, try Craigslist (www.craigslist.org), which offers regional listings for over 50 cities in the United States as well as many in the United Kingdom, Australia, and Canada. Each month you can find about 3 million new classified ads—featuring 75,000 job postings, plus personals, services, and items for sale—and more than 50 discussion forums.

Gasbuddy: In the era of \$2.50-per-gallon prices, remember to visit Gasbuddy (www.gasbuddy.com), which lists the lowest gas prices state by state—and province by province in case you're heading north.

TOOLS FOR BUSINESS

Investing Online Resource Center: Online investing is as tempting as visiting one of the Internet's many gambling sites, and yet lots safer. Or maybe not. If you're thinking of trying your hand at the stock market or otherwise tinkering with your savings, check out the nonprofit Investing Online Resource Center (www.investingonline.org). You'll find plenty of valuable advice and information, such as when your buy and sell orders are really placed.

The site's Flash-based Investing Simulator Center is a real eye-opener, letting you preview just how badly a poor financial choice could hurt (see **FIGURE 6**).

Keyhole: Just a few minutes on Keyhole (www.keyhole.com), and I felt like I was riding on a flying carpet, zooming in from space to anywhere in the world—down to as close as 15 meters or less in some swoops. Pop your street address into the text box at the bottom of the screen to get a bird's-eye view of your home. Sure, the service will set you back \$30 (lowered from \$80 when Google acquired Keyhole last November), but its 3D satellite views of streets in most major cities—not to mention the far reaches of the globe—are ideal if you're a real estate

pro, a salesperson, or even just a hiker who wants to plot your next trek in the Himalayas. Browse to find.pcworld.com/45742 for the service's seven-day trial.

Clipping Services: I want to hear about anyone mentioning my book, *PC Annoyances*, so I set Google Alerts (www.google.com/alerts) to check both Google's News and the Web automatically each day and then give me a report. But Google isn't the only free clipping service on the Web, and some Google Alerts competitors are just as cool. For example, RSCopyright's Clip&Copy service (free with registration; find.pcworld.com/45744) allows complex searches, such as "steve and bass not guitar". I can also limit my searches to any combination of roughly 200 periodicals, such as *Adweek* and *AP Custom News*. And if I want to know when a specific word

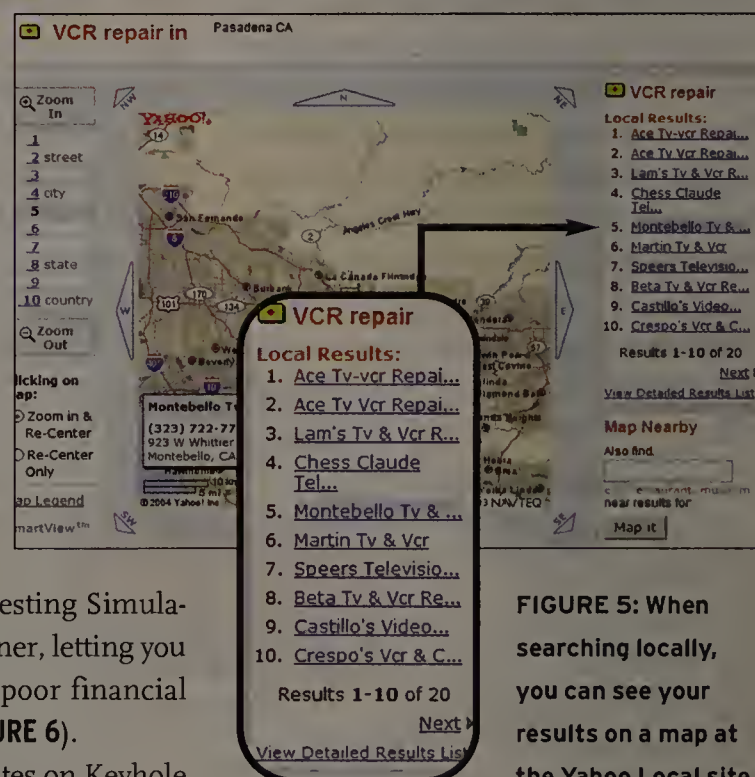


FIGURE 5: When searching locally, you can see your results on a map at the Yahoo Local site.

or phrase was spoken on TV, TVEyes (find.pcworld.com/45746) will send me an e-mail alert for free.

Consumer Demand Index: Shopping.com's Consumer Demand Index (find.pcworld.com/45758) ranks the top 20 shopping searches, the top gainers of the week, and the most popular products in various categories. One click gives you details on over 100 product groups.

AskNow: What's the average life expectancy of a California black oak tree?

Which section of the federal penal code deals with online spam? For answers to these and other obscurities, browse over to AskNow (www.asknow.org), a live, interactive service that's sponsored by reference librarians throughout California. Enter your question (along with your name and city), and click *Connect* to open a chat session with one of the volunteer librarians. You don't have to be a resident of the state, but you'll need to provide a California city and zip code (try Beverly Hills, 90210). Just be prepared to wait: Linking up with one of the librarians can take several minutes.

SHOPPING, INTERNET STYLE

Snap: Most Web search engines analyze a site's content and links to determine its relevance to whatever term you're trying to find information about. Snap (www.snap.com) is different because it bases its results on other variables, such as the percentage of users who did something on the site—for example, purchased an item

or subscribed to a newsletter. What makes Snap truly useful is its sorting: I entered "sony camcorder" and found the best spot for more info about the camera, as well as where other searchers went most often for product ratings (see **FIGURE 8**). The service was in beta when I looked at it, so the number of users was small, as were the statistics and site ratings, but it still got me to the information I needed. At the top of Snap's screen is a box listing keywords related to your search term—for example, "ring tones" if you searched on cell phones. Or enter a popular term such as "digital camera," and you'll see a product comparison chart loaded with detailed specs above the standard search results. You can even sort the table by category, or add and remove categories.

Cairo: Even if you prefer shopping at

brick-and-mortar stores, you'll benefit by using Cairo (www.cairo.com) to check out the local sales before you hop in the car. This comparison-shopping site zeroes in on local deals by zip code. Browse by products on sale, by retailer, or by brand; or if you're shopping for something specific, Cairo will send you an e-mail the moment it goes on sale.

LiveDeal: If you have something big to sell, such as a washing machine or a pool table, EBay may not be your best bet, considering the shipping hassles. LiveDeal (www.livedeal.com) is designed for buying and selling locally. Listings are free, provided that you don't want to highlight your listing, use the site's Buy Now feature, or add some other extra. A word of warning: The site is so slow you'll think you're back on dial-up. Oh, you're still on dial-up? Forget I said anything.

Internet bargains: I found two great Web sites for grab-'em-when-they're-hot Internet deals: Ben's Bargain Center (www.bensbargains.net) and DealCatcher (www.dealcatcher.com). I like their no-nonsense, get-right-to-business attitude. The deals on both sites are truly super. I once picked up 50 CD-R discs for just the \$2 shipping fee. And to make my bargain hunting even easier, I take advantage of the RSS feeds these sites offer. ▶



FIGURE 6: Give your investment strategy a test drive at the Investing Online Resource Center.

HAVE YOUR SAY

Join the Blog Generation

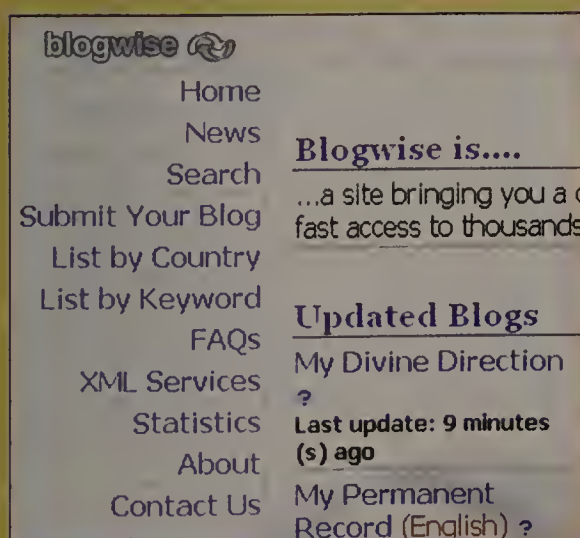


FIGURE 7: Blogwise has the blog for you.

THE PROBLEM WITH Web sites is that they're fairly static. Weblogs liven things up by allowing people to post via e-mail any little thought that comes to their mind, nearly instantly. And now that the camera-phone craze has created the photoblog offshoot, you can not only read about the daily trivialities of thousands of people you've never met, but see them too.

Blog guides such as Blogwise (www.blogwise.com; see **FIGURE 7**) employ teams of volunteer editors who review and categorize dozens

or even hundreds of blogs to winnow out the chaff. Photoblogs.org is a good place to start on your tour of image blogs, as well as to plunge into posting your own pictures.

If you're looking for a Web soapbox of your own, Google's free Blogger service (www.blogger.com) is perhaps the easiest way to join the blog herd. But when blogging really starts to take over your life, you may need the industrial-strength services of Six Apart's TypePad service (www.typepad.com, which starts at \$5 per month. —Scott Spanbauer

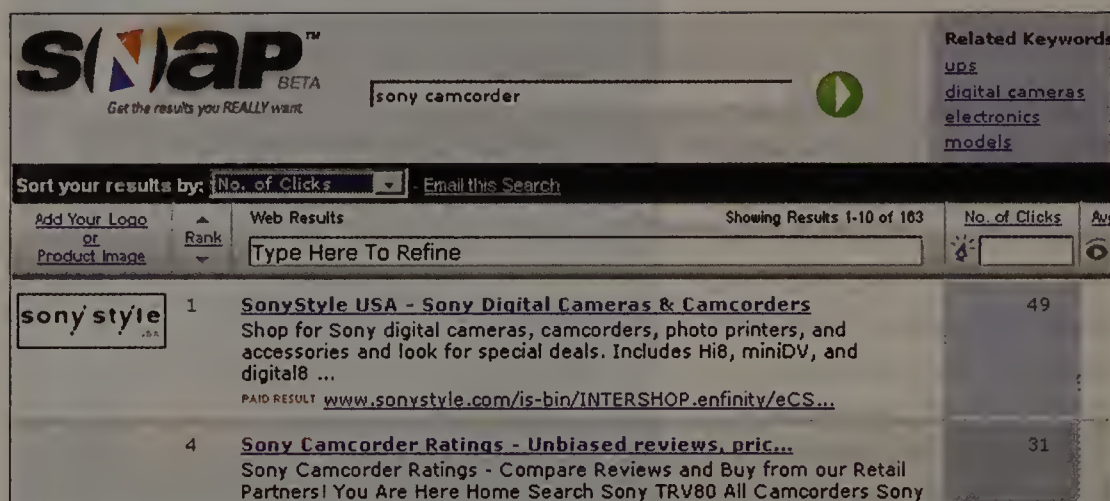


FIGURE 8: The Snap search engine delivers your search results in sortable tables.

A WORLD OF TRAVEL INFO

Kayak: I've always admired a good travel agent's ability to find the bargains. With Kayak (www.kayak.com) I feel like I'm my own travel agent. I ask for flights from Los Angeles to New York, and Kayak finds 117 that fit the bill. Too many, so I click *Price & Time* on the results page and use the sliders to make price, arrival, and departure adjustments (see **FIGURE 9**). The listings change in real time. If I forget to include a nearby airport as a departure alternative, just one click adds it, and one more tap on the *Stops* field sorts the flights to put the nonstops on the top. (Kayak can also find deals on hotels, and car rentals will be offered later this year.)

SideStep: Whenever you're looking for a second opinion, check out SideStep (www.sidestep.com), which offers immediate, side-by-side price comparisons for flights, hotels, and auto rentals. Visit find.pcworld.com/45750 to download SideStep's toolbar. It automatically opens a pane on the left side of Internet Explorer when you visit Expedia, Kayak, Orbitz, or any other travel site. Move to another site, and SideStep steps up with new pricing. Bargains are hit-and-miss: Against Kayak, the SideStep toolbar fared less well in flight prices, but it did better at finding low hotel rates. SideStep's rates compared favorably with those Travelocity served up, finding a cheaper JetBlue flight, and it blew away Orbitz with a \$113 flight savings. These results are from a few random searches—your mileage may vary.

TripAdvisor: When I first landed on TripAdvisor (www.tripadvisor.com), what

really jumped out at me was the site's placement on its "worst" list of a hotel my wife and I had planned to book, causing us to look for an alternative. Also handy are the user reviews in the site's TripAdvisor Forums, which can save you from repeating someone else's mistake. For an instant comparison of rates (for, say, a hotel mentioned on the forum) at Expedia, Hotels.com, Orbitz, and Travelocity, click the QuickCheck button to see the information from each site in turn.

Search Summary		Los Angeles, CA USA to New York, NY USA	
Flights Lowest		Thu., Feb. 3, 2005 to Tue., Feb. 8, 2005	
All Results	494 \$221	Flight Search Results	
Your Results	134 \$239		

Narrow Your Search		Price	
Price & Time (All prices and times)		Airports	
Price Range: \$221 to \$2750		LAX » EWR	
Depart: 9:00p to 9:00p		JFK » LAX	
Return: 3:00a to 7:00p		LGB » JFK	
Airports (showing 12 of 12)		JFK » LGB	

Price	Flight	Airline
\$239	LAX » EWR	United
\$239	JFK » LAX	United
\$255	LGB » JFK	Blue
\$255	JFK » LGB	Blue
\$255	LGB » JFK	Blue
\$255	JFK » LGB	Blue
\$255	LGB » JFK	Blue
\$255	JFK » LGB	Blue

FIGURE 9: Kayak's slider controls let you filter your travel search results by price and departure/return.

WiFiFreeSpot: You're crisscrossing the country on a business trip, and you just have to get online. There are scads of free Wi-Fi access points that will let you make the connection. WiFiFreeSpot (www.wififreespot.com) lists free Wi-Fi hotspots in airports, hotels, resorts, RV parks, campgrounds, and vacation rentals. The site covers North and South America, Europe, and Asia. You can also look for

hotspots by type of location or by region.

Dodgeball.com: If you're on the road and looking to hook up with some friends, use Dodgeball.com and your mobile phone to broadcast your whereabouts to your buddies. Send a text message to the site stating your location, and in no time all the pals on your Dodgeball.com network will get the message (you can also send them a photo, if your phone has a built-in camera). They'll find out what you're up to—and where they can join you. And if a friend of one of your friends is within ten blocks, they'll get a message as well (a feature you can turn off, thankfully). Dodgeball.com is available in Boston, Las Vegas, Los Angeles, New York, San Francisco, Seattle, and 16 other cities.

LATE NEWS, FRESH INFO

Amazon A9: You can browse for days and see nothing but the same old Web sites, but then stumble on a site like A9 (www.a9.com) and remember how much fun

the Web can be. A column of buttons lets you refine your standard Web search results to include the contents of books, or information related to movies, references, or images (see **FIGURE 10**). Each set of results displays in its own panel. If you install the A9 Toolbar, you can scribble quick notes about your search results. (This feature requires an Amazon account to store your history, bookmarks, and diary entries.) Hover the mouse pointer over a listing's Site Info button to view

valuable "People who visit this page also visit:" references. When the screen becomes too cluttered (and I promise, it will), grab the edge of a panel and resize it; A9 will remember your window preferences and reopen in that layout.

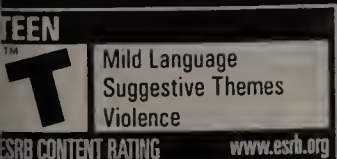
All the News: Spyware plagues nearly everyone surfing the Web. I use Topix.net to feed me the dirt on the latest spyware trying to infiltrate my PC. Aside from ►

THE MATRIX HAS ONLY JUST BEGUN TO GIVE UP ITS SECRETS.

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MUSIC BY: DON DAVIS. PRODUCED BY: MONOLITH PRODUCTIONS. DIRECTED BY: THE WACHOWSKI BROTHERS.



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technology, the site covers 11 other primary news categories, including gadgets, health, and local news based on your zip code. Visit Topix.net for your daily dose of spyware news (find.pcworld.com/45752), subscribe to the site's daily or weekly e-mail alerts, or sign up for its RSS feed.

Secunia: Next to spyware, Windows' security weaknesses are the biggest threat to PC users—and they seem to pop up far too regularly. I use Secunia (secunia.com) to search for details on specific security flaws in Firefox, Internet Explorer, or Windows. The site tracks security holes affecting 4000 other products, including programs from Cisco, HP, and Novell. Sign up for the site's weekly e-mail mis-sive, or subscribe to its RSS feed.

OldVersion: Have you ever suffered from Upgrader's Remorse? The disorder occurs when you regret a software update because the new version creates a conflict. You'll find the cure at OldVersion ([www](http://www.oldversion.com).

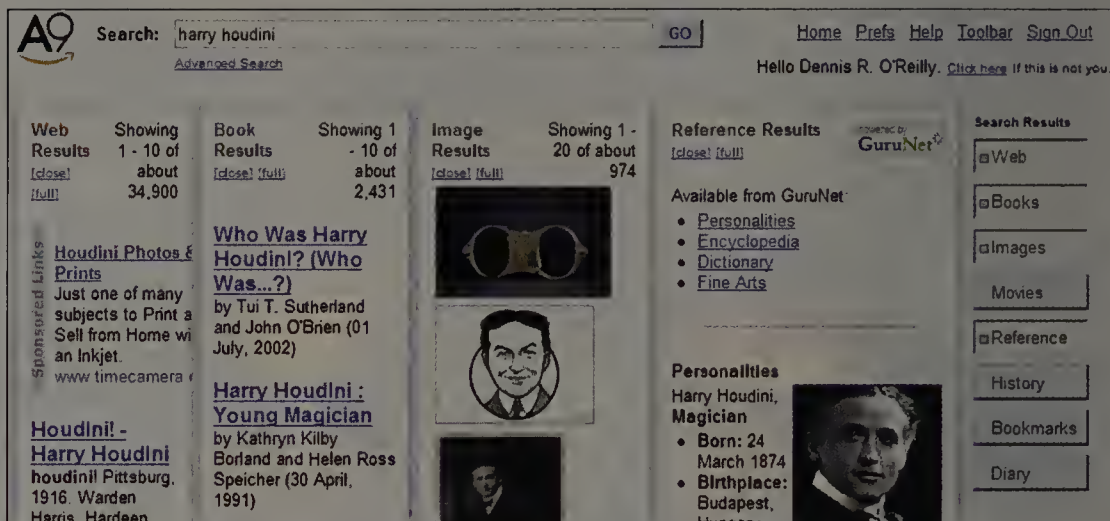


FIGURE 10: Broaden your Web search to include the contents of books, as well as movies, images, and other non-Web references, at Amazon's new A9.com search site.

oldversion.com), which houses about 500 old releases of over 50 products, both freebies and commercial programs. On the flip side are people who want to know immediately about the most current version of practically any program. If you belong in this group, visit VersionTracker (www.versiontracker.com) to make sure that your system is up-to-date with all the latest Windows, Palm, and Mac software.

Daily Rotation: So you say you're a technology news junkie? Me too, and that's why I swing by the Daily Rotation page (www.dailyrotation.com) each morning. The site serves up headlines from almost 200 news feeds, such as BetaNews, Microsoft Watch, and Neowin News. To keep from being overwhelmed, I configure Daily Rotation to show headlines from only about ten key sources.

Google Scholar: If you ever need to dig up details on a doctoral dissertation or find a specialized research paper hidden in the academic universe, try Google Scholar (scholar.google.com; currently in beta). You won't have to wade through endless, irrelevant results, plus you'll get valuable cross-references and citation rankings—essential tools for academicians. By the way, the first thing many people do on this site is to conduct an ego search (and no, my thesis wasn't listed).

Clusty: The new Clusty metasearch engine (clusty.com) from Vivisimo blasts your request to other sites based on what it knows about the strengths of individual search engines. For instance, Clusty entered a search for "Pasadena Doo Dah Parade" on GigaBlast, Lycos, MSN, and other sites, while a search for "migraine" added Overture, Wikipedia, and Wisenut to the mix. Click any of Clusty's five tabs (News, Images, Shopping, Encyclopedia, and Gossip) to bring up related topics, or add tabs for blogs and Slashdot. ■

Scott Spanbauer and Steve Bass are contributing editors and Dennis O'Reilly is a senior associate editor for PC World.

COLLECTIVE IQ

Wikis Bring the World Together



FIGURE 11: Leave a little bit of knowledge behind when you visit the Wikipedia online encyclopedia.

Wikipedia.org (see FIGURE 11), which, not surprisingly, contains the most detailed history of and guide to wikis anywhere (en.wikipedia.org/wiki/Wiki). For a list of nearly every wiki on the Web, check out WorldWideWiki's SwitchWiki site (find.pcworld.com/45760).

If you have a yen to work on your own wiki, you can practice editing one at Meatball's Sandbox site (find.pcworld.com/45762), and once you're ready to leave the sandbox, you can go out and tell the world what you really think.

—Scott Spanbauer

NO ONE LIKES a know-it-all. But occasionally, you learn things in life that ring true. If you were to put all of those random and not-so-random bits and pieces of priceless knowledge and wisdom together in one place, you'd have a knowledge resource of tremendous value.

That's the goal of a *wiki*—an open online encyclopedia of sorts that remains continuously under development by anyone who cares to contribute. One of the largest and most fascinating is

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JUST BECAUSE YOU don't want to schlep a laptop doesn't mean you can't stay connected. For a few years now, cell phones, PDAs, and portable computers have been shrinking, merging, and converging into a number of tiny data/communications devices. These smart phones, PDA/phone combos, and handheld PCs can keep you plugged in to e-mail, instant messaging, voice calls, and even the Web, wherever you go.

Our Editor's Picks, the PalmOne Treo 650 and the RIM BlackBerry 7100t, take very different approaches to creating a compact, cell-phone-size device that

does all those tasks well. While the PDA phones we looked at were clearly the best all-around units, some people may prefer a more specialized phone or a handheld PC. To help you pick the device that best suits your needs, we looked at a number of mobile communicators, rating them on their screen quality, ease of Web surfing, phone quality, and ease of text entry. (Visit find.pcworld.com/46274 for more information on all of the products we reviewed in this article.) ►

Going Mobile

From Windows XP micro-machines to Web-savvy phones, a new generation of portable devices lets you take data and the Net just about anywhere. We rate 12 contenders. BY THE PC WORLD STAFF



PDA Phones



Smart Phones



Handheld Computers

Mobile IM Devices



PDA Phones

A few years ago, PDA/phone hybrids were clumsy, bricklike monstrosities that failed to perform either function well. Now, these pocket-size all-in-ones have matured, adding truly usable keyboards to a form compact and slim enough to be appealing as a cell phone.



PalmOne Treo 650

Editor's PICK

★★★★★

Price: \$599

Service provider: Sprint

Weight: 6.3 ounces

Dimensions: 4.4 by 2.3 by 0.9 inches

Screen quality: Very good. Though small by PDA standards, the newly enhanced (320-by-320-pixel) screen with 65,000-plus colors is crisp and bright, making reading easy and graphics good-looking.

Text entry: Very good. Thank you, PalmOne, for the refinements in sculpture and layout that represent a considerable improvement over the merely acceptable thumb keyboard on the Treo 600.

Web worthiness: Good. The latest version of the

Blazer browser eventually renders most pages pretty well, and the improved display helps; but since the browser displays incomplete pages to save time, you see a lot of code as pages load.

Phone quality: Very good. With the possible exception of the BlackBerry 7100t, no other PDA/phone hybrid approaches the Treo 650 in approximating the look and feel of an actual mobile phone.

Bottom line: Building on the already fine Treo 600, the 650 adds a removable battery, Bluetooth, an improved keyboard and camera, and a high-res display. The Treo 650 is expensive, but it's one of the few PDA/phone hybrids that does everything well. Now all it needs is Wi-Fi and some more memory (32MB doesn't cut it these days). *—Yardena Arar*

FINER PRINT: The Treo 650's beautiful and bright new 320-by-320-pixel screen is a welcome upgrade from the Treo 600's 160-by-160-pixel display.

SDIO SLOT: Lets you expand the Treo's memory or plug in compatible peripheral cards.



CAMERA UPGRADE: The Treo 650's built-in camera features a 2X zoom, video capture capability, and a sensor that can take usable photos indoors.

RIM BlackBerry 7100t

Editor's PICK

★★★★★

Price: \$299

Service provider: T-Mobile

Weight: 4.2 ounces

Dimensions: 4.7 by 2.3 by 0.8 inches

Screen quality: Very good. The high-resolution 240-by-260-pixel display is bright and makes the phone's menu icons and attractive fonts easy to read.

Text entry: Very good. Getting used to the BlackBerry's SureType system takes a few minutes, but once you do, writing notes or e-mail messages is easy.

Web worthiness: Good. Web browsing isn't simple, but it's no harder than on most standard-size phones, and



pages look better on the 7100t's high-res screen.

Phone quality: Very good. Like the Treo 650, this hybrid not only looks and feels like a conventional cell phone, it works as well as one.

Bottom line: BlackBerry Internet Service allows you to read and send e-mail from multiple accounts without a special server on the other end. The unique keyboard and SureType software make sending e-mail simple, and the phone itself remains compact. The 7100t ships with 32MB of memory and no expansion slot, but if you're a BlackBerry fan and don't want or need more than a way to make calls and send e-mail, RIM's innovative phone may be just your cup of tea. *—Yardena Arar*

IMAGINATIVE ICONS: The retro look of the mailbox and phone suggests a welcome sense of humor on the part of the interface design team.



NO STYLUS REQUIRED: The jog dial and select button built into the right side of the 7100t are all you need to navigate through the menus and options with one hand.



SUCCESSFUL COMPROMISE: With a few more keys than a conventional cell phone and a clever predictive text-entry system, the 7100t straddles the demands of an e-mail device and a mobile handset.

These all-in-one communicators can be expensive, but they've evolved to the point where they're worth the cost. Priced from \$300 to \$600, these devices should particularly appeal to business travelers who want to call the office and check e-mail or browse the Web while they're on the go.

T-Mobile Sidekick II

★★★★☆

Price: \$300

Service provider: T-Mobile

Weight: 7.0 ounces

Dimensions: 5.1 by 2.6 by 0.9 inches

Screen quality: Good. The 240-by-160-pixel display is easy on the eyes, but colors are a little dull.

Text entry: Excellent. The Sidekick II's thumb keyboard is one of the best around. It's comfortable even for medium-length e-mail messages.

Web worthiness: Very good. The Sidekick II's service reformats most Web pages to fit its smaller screen, but the device doesn't sup-



port pages that employ JavaScript.

Phone quality: Good. The new Sidekick sounds as good as most cell phones, but it's still a bit unwieldy.

Bottom line: Rugged, fun, and easy to use, the Sidekick II is perfect for e-mail and instant-messaging junkies, thanks to its comfy, squishy keyboard. You can use the embedded camera for quick snapshots but nothing fancier. Though the Sidekick II improves on its prede-

cessor, it still needs a wider selection of office applications and games, an option to expand the memory beyond 32MB, and better ways to sync to a PC and dial calls.

—Grace Aquino



KEEP ON SCROLLING: Precise and handy, the clickable scroll wheel makes navigating the Sidekick II's menus an easy endeavor.

JUST FLIP IT: When the Sidekick II's screen flips up, it tilts slightly upward, coming to rest at a perfect viewing angle.

DIALING DISTRACTIONS: To manually dial a phone number on the Sidekick II, you have to flip the screen up and use the integrated keypad.



HP iPaq H6315 Pocket PC Phone

★★★★☆

Price: \$600

Service provider: T-Mobile

Weight: 6.7 ounces (including keyboard)

Dimensions: 4.7 by 3.0 by 0.7 inches

Screen quality: Very good. The 3.5-inch, transreflective LCD screen is as sharp, clear, and bright as we've come to expect from HP PDAs.

Text entry: Very good. A convenient-size, snap-on thumb keyboard (included) turns this Pocket PC phone into an even more able e-mail platform without adding unnecessary bulk.

Web worthiness: Very good. Wi-Fi, cellular, and Bluetooth network connections ensure that you'll

be able to log on anywhere, and the Pocket PC version of Internet Explorer does a good job of rendering most Web sites.

Phone quality: Fair. This iPaq is a PDA first and a cell phone second; though the device's voice quality is decent enough, its phone features can be awkward to use.

Bottom line: Providing built-in support for GSM/GPRS cellular networks, 802.11b Wi-Fi, and Bluetooth, HP's pricey handheld allows you to stay in touch in almost any location. Although the unit is a bit clumsy to use as a handset, the HP iPaq H6315 Pocket PC Phone does work great as a portable data connection for business travelers, and it also makes a serviceable cellular phone in a pinch.

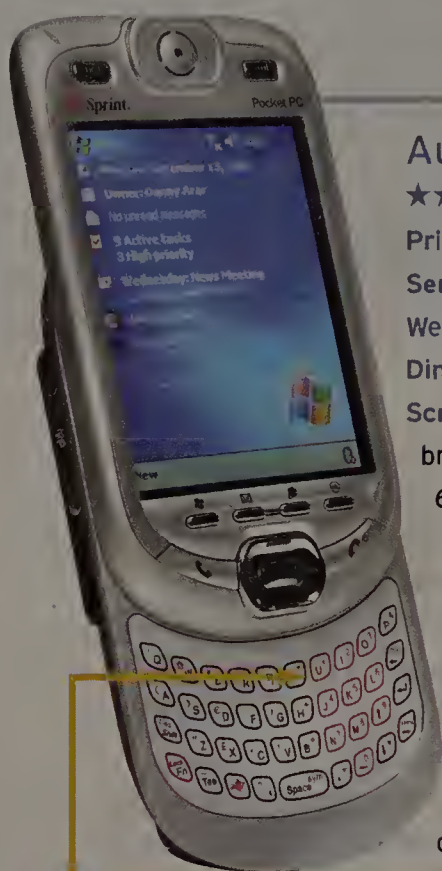
—Yardena Arar



CAMERA FRIENDLY: In addition to, well, pretty much everything else you could pack into a PDA, the iPaq H6315 includes a digital camera that can capture 640-by-480-pixel images.



BUILT-IN MEMORY: The iPaq includes 64MB of RAM. If that isn't enough, you can boost the memory by plugging an SD Card into the integrated SDIO slot.



Audiovox PPC-6601

★★★★☆

Price: \$629

Service provider: Sprint

Weight: 7.4 ounces

Dimensions: 4.9 by 2.8 by 0.8 inches

Screen quality: Very good. The Audiovox features a brilliant and bright, 240-by-320-pixel display with 65,000-plus colors, which is about what you'd expect from a decent Pocket PC. The ability to switch to landscape mode adds cachet.

Text entry: Fair. The integrated thumb keyboard that slides out from the bottom of the device has membrane keys, which don't provide the tactile feedback you get from sculpted keys. I constantly had to check to make sure my fingers had actually made contact.

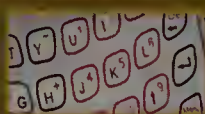
Web worthiness: Good. The unit's Internet Explorer renders pages fairly quickly, but images were a tad blurry. Landscape mode gives you a fair amount of screen width, which makes it easier to render standard Web pages more normally.

Phone quality: Fair. Voice quality is adequate, and touch-screen dialing makes the PPC-6601 easier to use than many PDA/phone products, but the unit is still a little awkward to hold.

Bottom line: As a phone, the Audiovox PPC-6601 is only so-so, but its built-in Bluetooth, 128MB of RAM, big and bright screen, and other helpful features make the unit a fine connected PDA. And for people who are used to carrying around such a device, this hybrid adds a serviceable keyboard and a cell phone to a PDA package without tacking on too much extra weight.

—Yardena Arar

DIAL-A-SCREEN: You can dial either by pressing the numbers on the keyboard or by using the touch screen's phone interface.



IF YOU NEED WI-FI: The PPC-6601's built-in SDIO expansion slot can be used to add a third-party Wi-Fi card or to expand the built-in memory.



Sierra Wireless Voq

★★★★☆

Price: \$499

Service provider: Carriers don't sell this phone directly, but AT&T Wireless/Cingular will sell you a SIM card that works with the device.

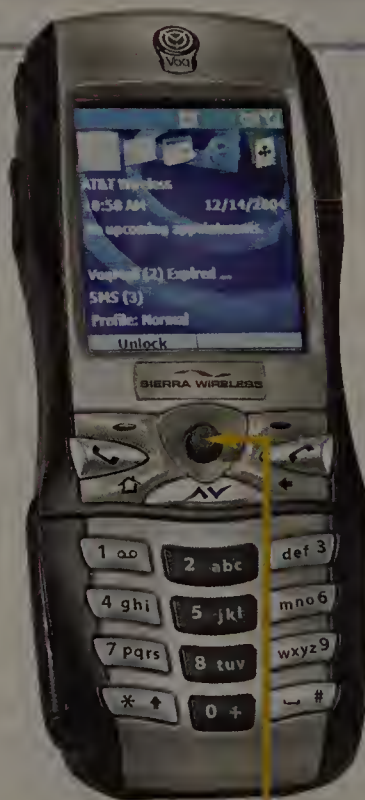
Weight: 5.1 ounces

Dimensions: 5.2 by 2.1 by 0.9 inches

Screen quality: Good. The Voq's 176-by-220-pixel, 2.2-inch screen does a good job of showing off the colorful Windows Mobile menus and is sufficiently bright for most settings.

Text entry: Good. The fold-out thumb keyboard feels a little flimsy, but it's comfortable enough for typing instant messages and short e-mail notes.

Web worthiness: Good. The Voq's Windows Mobile operating system includes a version of Internet Explorer that



makes for generally easy Web browsing; nevertheless, we did have trouble connecting to some sites, such as Yahoo Mail.

Phone quality: Good. Calls sounded fine most of the time, but the volume could have used a little more power. I didn't much care for the stiff volume-control buttons, either.

Bottom line: The Voq's Windows Mobile OS gives you access to popular Microsoft applications like Word and Outlook, but it does only a middling job as a phone and mobile messenger. Also, it lacks a camera, but that might be good news for some business users. Overall, the Sierra Voq's hardware design is just a bit behind the times. As a result, this is a device that feels a little too stiff and chintzy to make it a worthwhile investment.

—Grace Aquino



QUIRKY KEYBOARD: The Voq hides a flip-open QWERTY keyboard underneath its phone keypad, providing a lot of space between keys.

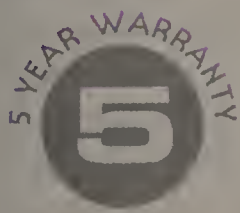
EASY SCROLLING: The phone's surprisingly accurate center joystick helps you navigate around menus and files quickly.

MORE STORAGE: In case you fill up the Voq's built-in 32MB of RAM, an SD/MultiMediaCard slot provides additional storage, a way to transport files, and access to more applications stored in SD/MMC cards.





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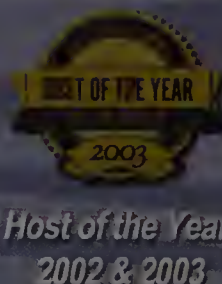


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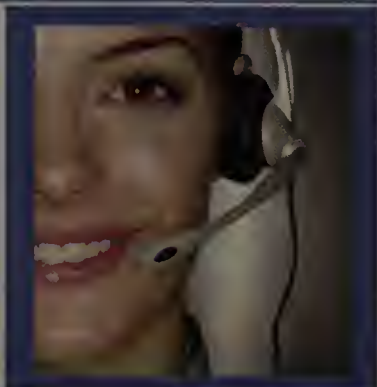
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- Susan

I can say without reservation that I have never received better support. Everything you did was timely and error-free.
- Bob

I just wanted to tell you how pleased I am with the software, training, and speed. It was much easier than I thought, and I could not be happier! Thanks!
- David

I'm really impressed with the fast service you guys provide and the polite way you deal with what must seem very basic questions to you. Brilliant service! Thanks!
- Sarah

I now have a few sites with you guys and believe me, I know the quality of your service, and it is a pleasure dealing with you. Your company is tops. Thanx again.
- Dusty

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Smart Phones

E-mail, instant messaging, and Web access are big parts of staying connected, but often the most important tool is a good cell phone. Even standard-looking phones have become better at handling data, photos, and video. These are a couple of the best.



Motorola Razr V3

★★★★★

Price: \$599

Service provider: Cingular

Weight: 3.4 ounces

Dimensions: 3.9 by 2.1 by 0.5 inches

Screen quality: Excellent. Photos and video clips looked especially good on the unit's internal, 176-by-220-pixel, 2.2-inch screen. It's bright, and colors are vivid.

Text entry: Fair. Motorola's ITap software is on a par with the T9 system that many cell phones use to assist in text entry, and it arguably has a better interface.

Web worthiness: Fair. The device runs both AOL and Yahoo Messenger IM. It is capable of browsing WAP 2.0 sites, but it does better at displaying text-based content from partner sites like CNNtoGo and The Weather Channel.

Phone quality: Very good. For such a thin device, the Razr is surprisingly comfy to hold. Add the Bluetooth and speaker-phone capabilities, and you've got an almost indispensable cell phone.

Bottom line: As a standard cell phone, nothing is sexier than the Razr. Plus, you

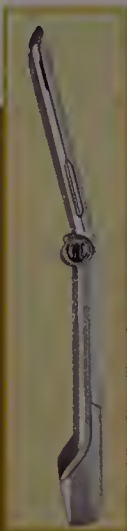
get a VGA camera, a voice recorder, and the ability to play back (but not record) MPEG-4 videos that you've downloaded to the phone's 5MB of memory. However, you can buy a more e-mail-friendly PDA/phone hybrid device—or an entire PC, even—for the same price. —Grace Aquino

ATTRACTIVE EXTERNAL DISPLAY: You can screen your calls by viewing the caller's number on the



unit's bright, four-line, external display.

THIN IS IN: The Razr V3 measures a hair under 0.5 inches thick, making this model one of the thinnest phones we've ever tested.



Audiovox SMT5600

★★★★★

Price: \$320

Service provider: Cingular

Weight: 3.6 ounces

Dimensions: 4.2 by 1.8 by 0.7 inches

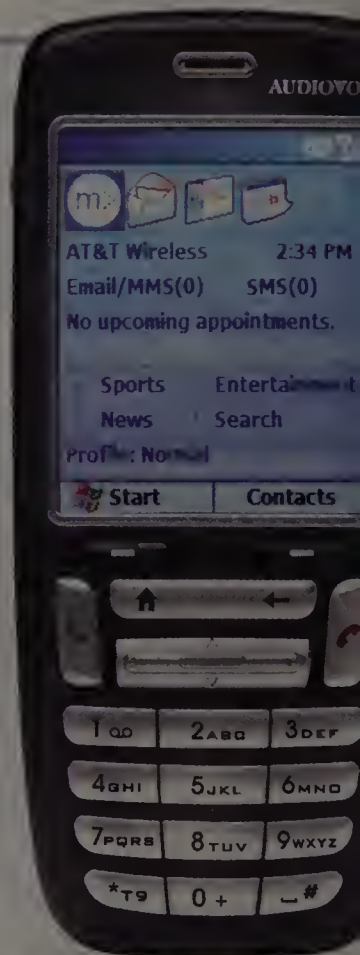
Screen quality: Good. A little grainier than the best phone displays, but easy enough to read both indoors and out.

Text entry: Fair. Like most cell phones without a true QWERTY keyboard, the SMT5600 forces you to enter alphanumeric data by tapping on the dial pad—and even with T9 predictive text entry, doing so is a chore.

Web worthiness: Fair. If you intend to spend much time online, you'll want a PDA/phone hybrid like the Treo 650. But Windows Mobile's Internet Explorer, Outlook, and MSN Messenger give this cell phone decent Web capabilities.

Phone quality: Very good. Hey, it's a phone—and a serviceable one at that, with a dedicated volume control, well-designed buttons, and a user interface that allows you to wrangle contacts with a minimum of key presses.

Bottom line: With a full suite of Windows Mobile entertainment and Internet apps, a Mini SD slot that supports up to 256MB, Bluetooth, a (so-so) camera, and more, this phone comes fully loaded. Yet its trim design keeps things simple, pocketable, and effortlessly portable. Its features also make it a respectable small-capacity music player—but use it to watch videos only if you don't mind tiny, fuzzy images. —Harry McCracken



THUMB FRIENDLY: The phone's accurate and intuitive five-way rocker switch and Home/Back buttons let

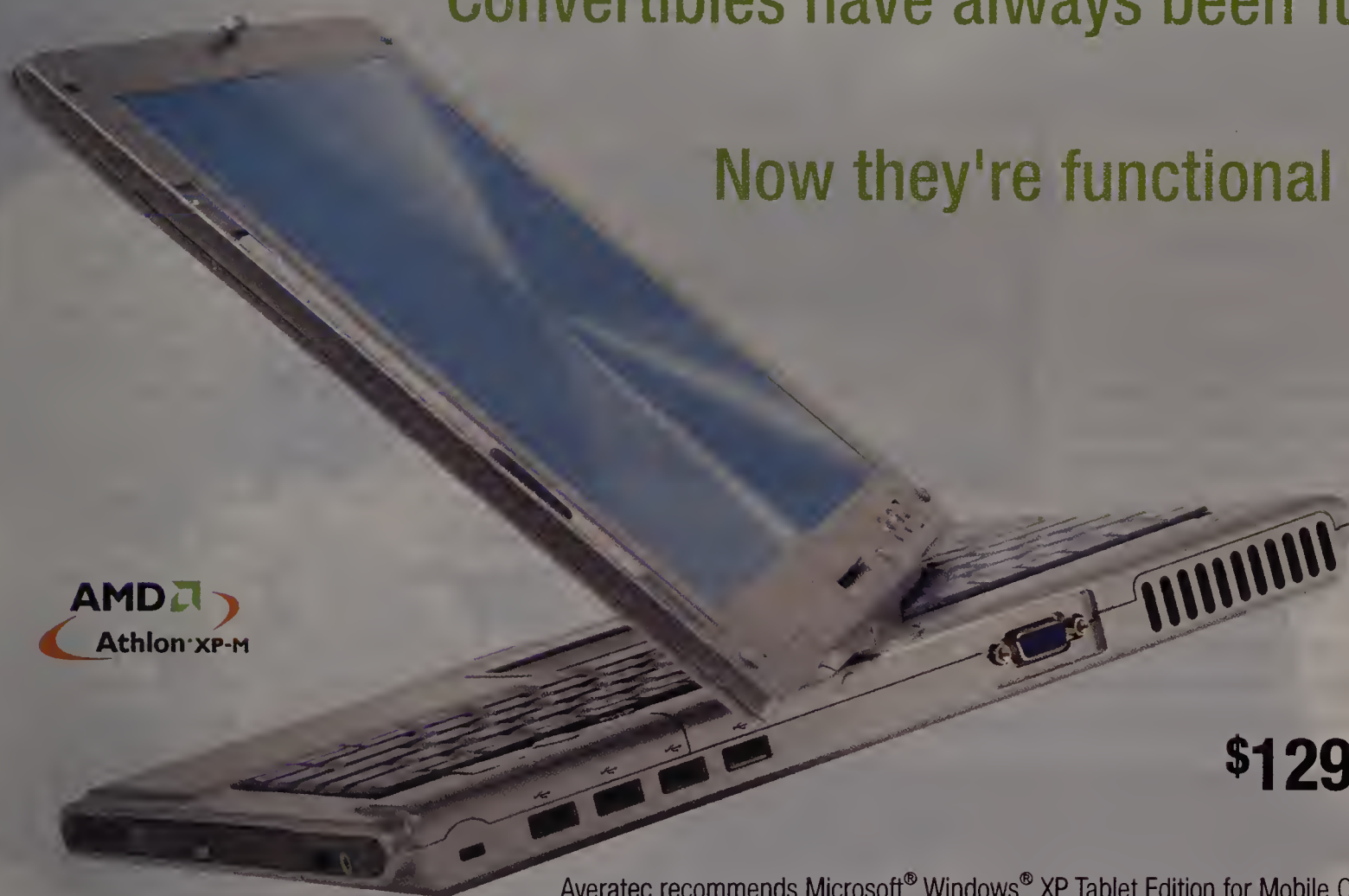


your thumb do most of the work of navigating through the phone's features—a great design for one-handed use.

MEDIA SAVVY: An iPod or a Portable Media Center it's not, but the SMT5600's Windows Media Player and support for services such as Napster make it more of an entertainment machine than your average cell phone.

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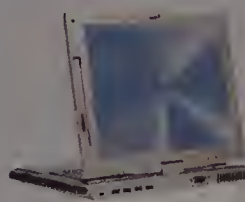
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Handheld Computers

Need more power than a PDA, but don't want the bulk of a notebook? Priced around \$2000, these palmtop Windows PCs have their drawbacks—but if you need maximum horsepower in a minimal package, they might be the way to go.

Sony VAIO U750P

★★★★☆

Price: \$2000

Weight: 1.2 pounds (sans keyboard)

Dimensions: 6.6 by 4.3 by 1.0 inches

Screen quality: Excellent. The VAIO

U750P's 5-inch-diagonal, 800-by-600-pixel, touch-sensitive color LCD provides

an impressively wide range of acceptable viewing angles. The display is fast enough to handle video clips, and it makes both photographs and Web sites look great.

Text entry: Good. When the unit is connected to the included fold-out USB keyboard, typing is on a par with that of a standard laptop. Otherwise, you'll either have to use a stylus and the RitePen hand-



writing recognition software or tap out letters using an on-screen keyboard.

Web worthiness: Excellent. Built-in Wi-Fi lets you link to the Net and surf using your favorite browser.

Bottom line: Powerful and compact, this VAIO U Series machine is full of interesting design compromises.

The U750P runs Windows XP Pro, and it packs 512MB of RAM, a 1.1-GHz Pentium M Ultra Low Voltage 733 CPU, a 20GB hard drive, and built-in 802.11g Wi-Fi into a package that is smaller and lighter than some paperback novels. But the separate keyboard makes the U750P harder to use—at least for writing messages—when it isn't plugged into its docking station. —Eric Dahl

● **MOUSING AROUND:** The small stick on the right side of the U750P controls your pointer, while the three buttons on the opposite side act as your mouse buttons. Both the buttons and the control stick work well.



● **SCREEN ORIENTATION:** The Rotate key lets you easily switch from landscape mode to portrait mode, which makes this device good for reading e-books or lengthy documents.



OQO Model O1 Ultra Personal Computer

Preproduction unit, not rated

Price: \$1999

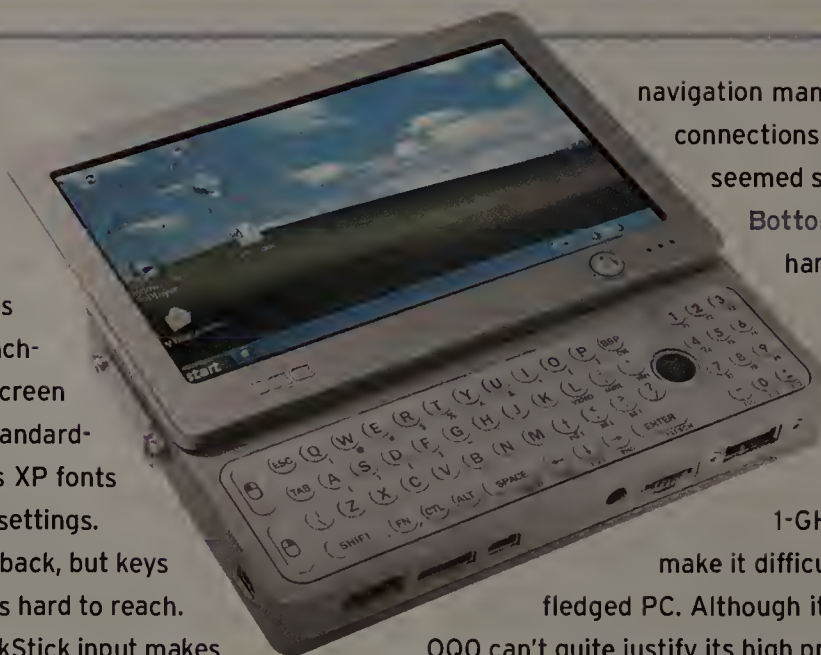
Weight: 14 ounces

Dimensions: 4.9 by 3.4 by 0.9 inches

Screen quality: Very good. The 5-inch-diagonal, 800-by-480-pixel touch-screen display is good for viewing most standard-width Web sites, but many Windows XP fonts appear awfully small at the default settings.

Text entry: Fair. Decent tactile feedback, but keys are placed oddly and the spacebar is hard to reach.

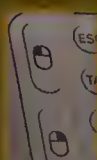
Web worthiness: Good. Unique TrackStick input makes



navigation manageable, and Bluetooth and Wi-Fi connections are included, but page rendering seemed sluggish even over broadband.

Bottom line: The OQO includes a 20GB hard drive and 256MB of RAM, runs a full version of Windows XP, and is good for a little over an hour of battery life with Wi-Fi active. Unfortunately, the unit's small screen and its underpowered

1-GHz Transmeta Crusoe processor make it difficult to use as if it really were a full-fledged PC. Although it's a groundbreaking product, the OQO can't quite justify its high price tag. —Tom Mainelli ►



● **TRACKSTICK AND MOUSE BUTTONS:** Like the VAIO U750P, the OQO relies on a combination of a right-side TrackStick (it works like the eraserhead controllers on many laptops) and two left-side mouse buttons that makes navigation intuitive.

● **HEADPHONE JACK:** To listen to movies or music on the Model O1, you'll need to wear a set of headphones, since this unit has no built-in speaker. Unfortunately for multitaskers, a poorly placed headphone jack makes it hard to continue typing once you're plugged in.

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KL- 1915A



KL- 1915B

Mobile IM Devices

Targeted mainly at teens and 'tweens, mobile instant messaging devices offer a low-cost way to chat with friends on IM without a PC.



AT&T Wireless Ogo

★★★★★

Price: \$99

Service providers: AT&T Wireless/Cingular

Weight: 5.7 ounces

Dimensions: 4.5 by 3.0 by 1.0 inches

Screen quality: Fair. The Ogo's color screen is impressive for a \$100 device, but the

displays of most good cell phones still put it to shame.

Text entry: Good. Though the keys are a little slippery, typing long e-mail or instant messages is easy on the Ogo's keyboard.

Bottom line: The Ogo lets you connect to IM and personal e-mail from pretty much anywhere you can pick up an AT&T Wireless/Cingular signal. If that's all you need, it's a useful tool. At press time, the Ogo offered all-you-can-eat IM and e-mail from one AOL, MSN, or Yahoo account for \$18 per month. Paying another \$3 per month allows you to add another account.

-Eric Dahl

Motorola IMFree

★★★★★

Price: \$100

Weight: 9 ounces

Dimensions: 4.5 by 4.8 by 1.3 inches

Screen quality: Poor. A simple seven-line black-and-white LCD is all you get. There's no backlight.

Text entry: Good. The IMFree's keyboard is spongy to a fault, but it's big enough for comfortable thumb typing. Emoticons are available through six function keys.

Bottom line: Connect the included IMFree wireless base station to your computer, and up to seven people can use IMFree devices to chat with friends on AOL Instant Messenger from as far as 150 feet away. Whoever is using the PC can work uninterrupted. That's the admittedly novel selling point of Motorola's IMFree. It's a neat idea, but what with cheap PCs, multiple-computer homes, and wireless networking, how many people really need a \$100 device to avoid computer-use collisions?

-Eric Dahl ■



DESIGN

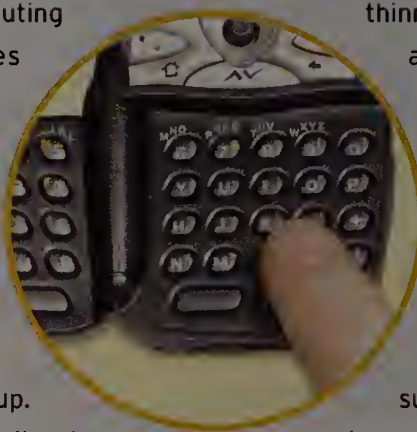
How Small Is Too Small?

SMALLER, BETTER, FASTER is the classic computing paradigm, but with mobile devices it sometimes seems that the emphasis is on smaller, smaller, smaller. So when does the shrinking stop? When does small become small enough? Experts say that some of today's cell phones have shrunk as far as they can, while still remaining usable.

"Keyboards are probably as small as they can go and still offer fairly comfortable usability," says Todd Kort, principal analyst for Gartner Group.

But if keyboards can't get smaller, devices can't get smaller, so cell phone manufacturers are turning to some interesting engineering tricks to cram a decent-size keyboard into a tiny space. The Voq, for example, uses a keyboard that folds out; and RIM opted to put two letters on the keys of its BlackBerry 7100t, adding only eight new buttons to a standard phone's keypad.

Screen sizes, too, are about as tiny as they can be. The screens on many mobile devices are already too small to properly display most Web content. Among the few tricks left is to make screens



thinner and decrease the amount of power they use, to allow for smaller batteries. According to Kort, transreflective screens currently provide the best mix of brightness and low power consumption. Sharp is working on a continuous-grain silicon technology that promises to lower power requirements in future phone-size displays.

And as flash memory cards continue to shrink in size and grow in capacity—and in price—some consumers have begun to worry about how easy it is to lose a sub-postage-stamp-size memory module. Between a thin, light phone and a tiny memory card, some people are carrying \$800 of technology in a package smaller than most wallets.

"People are looking for devices that perform multiple tasks and are pocketable," says Kort, "but there are sacrifices in design to get all that functionality into smaller real estate. We all want tiny computers and cell phones with big, bright screens and hours upon hours of battery life. But we may be bumping up against the practical limits of how small things can get."

-Eric Dahl

Acer recommends Microsoft® Windows® XP Professional.

January/
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(1.60GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP TABLET PC EDITION
512MB DDR333 SDRAM, 60GB¹ HARD DRIVE
AND MODULAR CD-RW/DVD-ROM COMBO DRIVE
(LX.T280E.181)

Acer® EasyPort



Acer EasyPort Port Replicator III

\$99

COMPATIBLE WITH THE TRAVELMATE 8000, 6000, 4500, 3200,
800, 660, C300, C110 AND FERRARI 3400
(LC.T4101.004)

Acer 19.0" and 17.0" Flat Panel Displays

Complex spreadsheets, graphic design, CAD/CAE and videoconferencing are among the applications that call for a generously sized 19.0" LCD. Less scrolling and fewer keystrokes help workers be more productive.



Acer AL1931

- 19.0" TFT LCD
- 1280 x 1024 native resolution
- 700:1 contrast ratio
- 170° horizontal viewing angle
- 170° vertical viewing angle
- 2 x 1.0W integrated speakers
- VGA, DVI-D, AV signal connectors
- 300 cd/m² brightness
- 25ms response time
- Silver/black color

Acer AL1931

\$459



Acer AL1912

- 19.0" TFT LCD
- 1280 x 1024 native resolution
- 500:1 contrast ratio
- 140° horizontal viewing angle
- 140° vertical viewing angle

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

Acer recommends Microsoft® Windows® XP Professional.

Acer® TravelMate® 3200

Dressed for Professional Success

This travel-friendly notebook in the elegant new Acer Folio design weighs in at a mere 4.5 pounds with its optical drive and battery installed but packs enough power and features to be your desktop-replacement system. Add the optional EasyPort Port Replicator III and you can quickly connect/disconnect from your printer and other office tools.



**MOBILE
TECHNOLOGY**



- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor
 - Intel® 855GME chipset
 - Intel® PRO/Wireless 2200BG network connection
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 60GB¹ hard drive
- Modular CD-RW/DVD-ROM combo drive
- 3-in-1 card reader
- 14.1" XGA (1024 x 768) TFT display
- ATI® MOBILITY™ RADEON™ 9700 graphics, 64MB DDR
- 802.11b/g WLAN, gigabit LAN, V.92 modem
- One-year limited warranty²

Acer TravelMate 3201Xci-XPP-SP2

\$1,499

INTEL® PENTIUM® M PROCESSOR 715
(1.50GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
(LX.T4806.049)

Acer® TravelMate® C110

Compact, On-The-Go Tablet

You can use the innovative Acer TravelMate C110 like a clipboard by writing directly on the display with the included EMR pen or stylus. When you're ready to use the keyboard, just flip the display and you have a full-functioned notebook computer weighing just 3.2 pounds (without external drive). What could be more convenient?

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor
 - Intel® 855GME chipset
 - Intel® PRO/Wireless 2100A network connection
- Microsoft® Windows® XP Tablet PC Edition
- 512MB DDR333 SDRAM
- 10.4" XGA (1024 x 768) TFT display
- Intel® Extreme Graphics 2
- 802.11b/g WLAN, Bluetooth™, 10/100 LAN, V.92 modem
- One-year limited warranty²

Acer TravelMate C112TCi-SP2

\$1,599

INTEL® PENTIUM® M PROCESSOR ULV 733
(1.10GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP TABLET PC EDITION
60GB¹ HARD DRIVE AND EXTERNAL
CD-RW/DVD-ROM COMBO DRIVE
(LX.T270E.280)

Acer TravelMate C112Ti-SP2

\$1,399

INTEL® PENTIUM® M PROCESSOR ULV 733
(1.10GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP TABLET PC EDITION
AND 40GB¹ HARD DRIVE.
OPTIONAL EXTERNAL COMBO DRIVE
(LX.T270E.278)



Whether creating spreadsheets, word processing or searching the Web, you'll see sharp detail and vivid images on a 17.0" LCD. Ideal for businesses of all sizes.

VGA signal connector
250 cd/m² brightness
6ms response time
Black color

Acer AL1912

\$325



Acer AL1731

- 17.0" TFT LCD
- 1280 x 1024 native resolution
- 430:1 contrast ratio
- 160° horizontal viewing angle
- 130° vertical viewing angle
- 2 x 1.0W integrated speakers
- VGA, DVI-D, AV signal connectors
- 250 cd/m² brightness
- 20ms response time
- Silver/black color

Acer AL1731

\$299

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Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

acer

Acer® TravelMate® 2300 Maximum Mobility, Affordable Price

The Acer TravelMate 2300 is designed to deliver high performance in a portable package that's both appealing and affordable. This all-in-one notebook with integrated wireless connectivity and 15.0" viewing area has the comprehensive feature set and flexibility needed for a busy lifestyle like yours.



- Intel® Celeron® M Processor
- Microsoft® Windows® XP Professional
- 512MB DDR266 SDRAM
- 60GB¹ hard drive
- Integrated CD-RW/DVD-ROM combo drive
- 15.0" XGA (1024 x 768) TFT display
- Intel® 852GM chipset with integrated Dynamic Video Memory Technology (DVMT)
- 802.11b/g WLAN, 10/100 LAN, V.92 modem
- One-year limited warranty²

*Perfect balance of
price & performance*

SAVE \$350!

Acer TravelMate 2303LCi-XP

\$849

INTEL® CELERON® M PROCESSOR 340
(1.50GHz, 512KB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
(LX.T5706.153)



Acer 17.0" Flat Panel Displays

Whether creating spreadsheets, word processing or searching the Web, you'll see sharp detail and vivid images on a 17.0" LCD. Ideal for businesses of all sizes.



Acer AL1715

- 17.0" TFT LCD
- 1280 x 1024 native resolution
- 500:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- 2 x 1.0W integrated speakers on select models
- VGA signal connector
- 300 cd/m² brightness
- 12ms response time
- Black or beige color

Acer AL1715

\$279

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

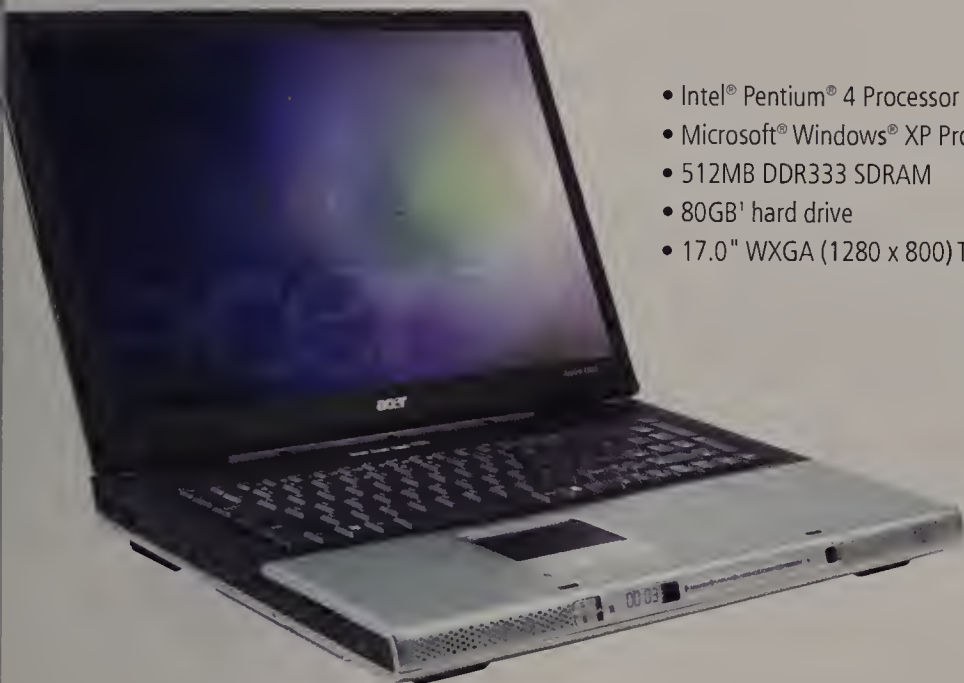
Acer recommends Microsoft® Windows® XP Professional.



Acer® Aspire™ 1800

Desktop Power in Mobile Form Factor

Let the Acer Aspire 1800 be your portable entertainment and creativity center. Play the latest games, watch your favorite movies, edit videos or use power-hungry productivity applications. You won't miss one show-stopping moment on the 17.0" wide-screen display, and thanks to the ATI® MOBILITY™ RADEON™ X600 chip, you'll experience new levels of graphics performance. Instead of being tied to your desk, enjoy the best in multimedia all around your home.



- Intel® Pentium® 4 Processor with HT Technology
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 80GB¹ hard drive
- 17.0" WXGA (1280 x 800) TFT display
- Integrated Super Multi Write Plus (DVD -RW, +RW, -RAM) drive
- ATI® MOBILITY™ RADEON™ X600 graphics, 64MB DDR
- 802.11b/g WLAN, Bluetooth™, gigabit LAN, V.92 modem
- One-year limited warranty²

Acer Aspire 1804WSMi-XPP

\$1,699

INTEL® PENTIUM® 4 PROCESSOR 540 WITH HT TECHNOLOGY
(3.20GHz, 1MB L2 CACHE, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
(LX.A2906.009)

Acer® TravelMate® 2700

Performance Teamed with Practicality

Savvy users know that a wide-angle display can make work easier and enhance productivity. You'll see sharp text and crisp images on the Acer TravelMate 2700's 15.4" wide-angle LCD and have the convenience of viewing spreadsheets side by side on a single screen. Combining practicality with first-class performance, the Acer TravelMate 2700 is an excellent choice for small/home offices and small-to-medium businesses as well as government/educational institutions.

- Intel® Pentium® 4 Processor
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 40GB¹ hard drive
- Integrated CD-RW/DVD-ROM combo drive
- 15.4" WXGA (1280 x 800) TFT display
- ATI® MOBILITY™ RADEON™ 9000 graphics
- 802.11b/g WLAN, 10/100 LAN, V.92 modem
- One-year limited warranty²

Acer TravelMate 2701WLCi-XPP-SP2

\$1,099

INTEL® PENTIUM® 4 PROCESSOR 2.80GHz
(512KB L2 CACHE, 533MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
(LX.T6006.093)



Acer AL1714

- 17.0" TFT LCD
- 1280 x 1024 native resolution
- 350:1 contrast ratio
- 160° horizontal viewing angle
- 120° vertical viewing angle
- VGA signal connector
- 370 cd/m² brightness
- 14ms response time
- Black color

Acer AL1714

\$239

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Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

acer

Acer® Veriton® 7600GT Business Productivity Tool - Minitower



The Acer Veriton 7600GT minitower, with a deep-charcoal chassis, is a superb business productivity tool that includes a powerful processor, integrated graphics, management software and room for expansion. The one-touch recovery feature easily returns the PC to its original configuration.

- Intel® Pentium® 4 Processor with HT Technology
- Microsoft® Windows® XP Professional
- 512MB DDR400 SDRAM
- 80GB¹ hard drive
- CD-RW drive
- 1.44MB¹ floppy drive
- Intel® Extreme Graphics 2
- Gigabit LAN
- Three-year limited warranty²

Acer Veriton 7600GT-U-P3201

\$869

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.20GHz
(1MB L2 CACHE, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer Veriton 7600GT-U-P3001

\$799

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.00GHz
(1MB L2 CACHE, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer® Veriton® 5600GT Business Productivity Tool - Standard Desktop

The Acer Veriton 5600GT standard desktop offers the ultimate balance between space-saving design and expandability, all in a handsome deep-charcoal chassis.



- Intel® Pentium® 4 Processor with HT Technology
- Microsoft® Windows® XP Professional
- 512MB DDR400 SDRAM
- 80GB¹ hard drive
- CD-RW drive
- 1.44MB¹ floppy drive
- Intel® Extreme Graphics 2
- Gigabit LAN
- Three-year limited warranty²

Acer Veriton 5600GT-U-P3201

\$869

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.20GHz
(1MB L2 CACHE, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer Veriton 5600GT-U-P3001

\$799

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.00GHz
(1MB L2 CACHE, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer 15.0" Flat Panel Display

A 15.0" LCD is appropriate when both space and budget are limited. It's suitable for most business applications as well as home activities, such as Web surfing and e-mail.



Acer AL1511

- 15.0" TFT LCD
- 1024 x 768 native resolution
- 350:1 contrast ratio
- 140° horizontal viewing angle
- 125° vertical viewing angle
- VGA signal connector
- 250 cd/m² brightness
- 25ms response time
- Black or beige color

Acer AL1511

\$199

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

Acer recommends Microsoft® Windows® XP Professional.

Acer® Veriton® 3600GT Business Productivity Tool - Compact Desktop

The compact form factor of the deep-charcoal Acer Veriton 3600GT makes it the perfect desktop solution when space is at a premium.



- Intel® Pentium® 4 Processor with HT Technology
- Microsoft® Windows® XP Professional
- 512MB DDR400 SDRAM
- 80GB¹ hard drive
- CD-RW drive
- 1.44MB¹ floppy drive
- Intel® Extreme Graphics 2
- Gigabit LAN
- Three-year limited warranty²



Acer Veriton 3600GT-U-P3201

\$869

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.20GHz
(1MB L2 CACHE, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer Veriton 3600GT-U-P3002

\$799

INTEL® PENTIUM® 4 PROCESSOR WITH HT TECHNOLOGY 3.00GHz
(1MB L2 CACHE, 800MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

Acer® AcerPower™ F2 All-Around Budget Performer

Proven technology, high-level reliability and expansion options help to make the AcerPower F2 minitower a sound investment for home, school or office needs.

- Intel® Pentium® 4 Processor or Intel® Celeron® D Processor
- Microsoft® Windows® XP Professional
- 256MB DDR SDRAM
- 40GB¹ hard drive
- CD-ROM drive
- 1.44MB¹ floppy drive
- Intel® Extreme Graphics 2
- 10/100 LAN
- One-year limited warranty²

AcerPower F2-U-N2800

\$499

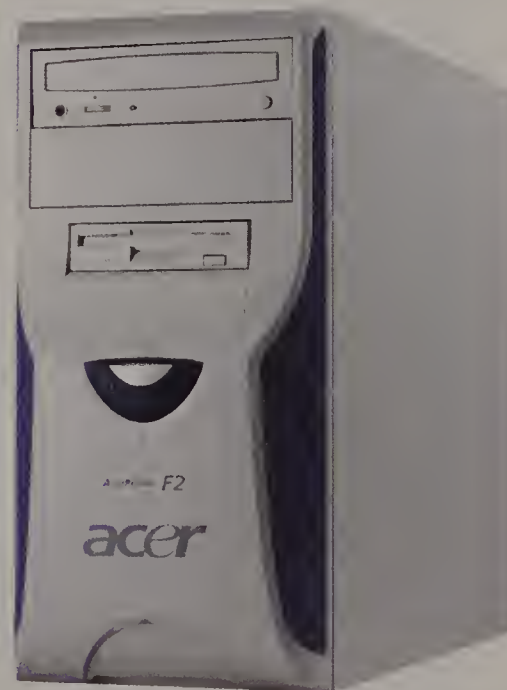
INTEL® PENTIUM® 4 PROCESSOR 2.80GHz
(512KB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL

While supplies last!

AcerPower F2-U-C3000

\$399

INTEL® CELERON® D PROCESSOR 330
(2.66GHz, 256K L2 CACHE, 533MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL



Acer 17.0" CRT Monitor

A dependable CRT monitor is a great value for education, small business and home use, providing crisp text and graphics.



Acer AC711

- 17.0" CRT
- 16.1" diagonal viewing area
- 1024 x 768 @ 85Hz recommended resolution
- 0.27mm dot pitch
- Black or beige color

Acer AC711

\$109

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Empowering People

acer

Acer® TravelMate® 4500 All-Around Business System

Suitable for both office and on-the-go use, the Acer TravelMate 4500 strikes just the right balance between performance and mobility. Connect to workplace peripherals in one easy step with the optional EasyPort Port Replicator III. On the road, expect up to five hours of battery life (depending on configuration and usage) from this 6.5-pound notebook. And should you want to cut the weight, the modular optical drive is easily removed.



MOBILE
TECHNOLOGY

Acer recommends Microsoft® Windows® XP Professional.

Up to 1GB memory and
100GB¹ hard drive



- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor
 - Intel® 855GME chipset
 - Intel® PRO/Wireless 2200BG network connection
- Microsoft® Windows® XP Professional
- Modular DVD-Dual drive (DVD+/-RW)
- 15.0" XGA (1024 x 768) TFT display
- Intel® 855GME chipset with integrated graphics
- 802.11b/g WLAN, 10/100 LAN, V.92 modem
- One-year limited warranty²

Acer TravelMate 4504LMi

\$1,499

INTEL® PENTIUM® M PROCESSOR 745
(1.80GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
1GB DDR333 SDRAM AND 100GB¹ HARD DRIVE
(LX.T5106.112)

Acer TravelMate 4502LMi

\$1,199

INTEL® PENTIUM® M PROCESSOR 725
(1.60GHz, 2MB L2 CACHE, 400MHz FSB)
MICROSOFT® WINDOWS® XP PROFESSIONAL
512MB DDR333 SDRAM AND 80GB¹ HARD DRIVE
(LX.T5106.109)

Acer Notebook/Tablet Service Upgrades Protect Your Valuable Investment

Quality is built into every notebook and Tablet PC Acer makes, and each comes with a one-year standard limited warranty.² It includes 24/7 (excluding some holidays) hardware technical support via toll-free phone plus a concurrent International Traveler's Warranty for travel outside the U.S. and Canada. Extra protection is available with one of these upgrades:

2-Year Extension of Limited Warranty (146.AB820.EX2)

\$99

Prepays freight to and from Acer repair depot.
Excludes extension of International Traveler's Warranty.

It's a tough world out there, and accidents do happen—sticky spills, dangerous drops, nasty knocks—which is why you should consider the Total Protection Upgrade. It runs concurrently with the limited warranty and limited warranty extension and covers the cost of a replacement unit if your covered notebook cannot be repaired.

2-Year Extension of Limited Warranty + 3-Year Total Protection Upgrade (146.AD077.002)

\$199

Prepays freight to and from Acer repair depot.
Excludes Extension of International Traveler's Warranty.

¹ When referring to storage capacity, GB stands for one billion bytes and MB stands for one million bytes. Some utilities may indicate varying storage capacities. Total user-accessible capacity may vary depending on operating environments.

² For a free copy of the standard limited warranty end-users should see a reseller where Acer products are sold or write to Acer America Corporation, Warranty Department, P.O. Box 6137, Temple, TX 76503.

For the name of a reseller near you or further
information, please call Acer or visit our Web site:

800-571-2237

www.acer.com/us

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NET Drives



Got multiple PCs and a network? New net-ready hard drives are a smart, affordable way to back up and share data.

BY BECKY WARING
PHOTOGRAPHS BY GEOFF SPEAR

Network-attached storage (NAS) sounds very big and technical—the term refers to devices that were conceived as a tool for large organizations—but this is not a geeks-only article. These hard drives with brains are now compact, inexpensive, and easy to use, and they can provide automatic backup and storage for as few as two networked computers. The products reviewed here can be installed and maintained by anyone comfortable with setting up a home or small-office network—no IT training

necessary. These ten products range from networked hard drives to more richly equipped NAS units, which in turn possess fewer capabilities than full-fledged servers. Typically each contains an embedded processor, an operating system, and one or more hard drives, often with room to add still more storage capacity. The result is a dedicated storage server that lets users back up and share files.

TOP 100

TEST
Center

Network Storage for Home and Business

THE BUFFALO LINKSTATION NETWORK STORAGE CENTER was our home choice for its ease of use (it also makes a good option for small businesses). The Snap Appliance Snap Server 1100 was our business pick for its rich and sophisticated file-sharing features.

NETWORK-ATTACHED STORAGE DEVICE	Best for	Street price (11/22/04)/cost per GB	Performance rating/copy speed/write speed ¹	Tested capacity	Ports and expandability	Usability rating	Extras
Buffalo LinkStation Network Storage Center (★★★★★) Best BUY find.pcworld.com/45888	Home and Business	\$399/\$1.60	Very Good /6.35/5.13	250GB	Two USB 2.0 (one for a printer, the other for a drive), ethernet	Outstanding	Proprietary software for backing up NAS and clients, print server
Iomega NAS 100d (★★★★) find.pcworld.com/45886	Home	\$499/\$3.12	Very Good /5.86/5.28	160GB	Two USB 2.0 (both for drives), ethernet	Outstanding	Iomega Automatic Backup software, 802.11g wireless
Linksys EtherFast Network Attached Storage EFG 250 (★★★★☆) find.pcworld.com/45880	Business	\$749/\$3.00	Very Good /6.40/6.62	250GB	Parallel port for print server, gigabit ethernet, second drive bay	Good	Backup software, parallel print server
Linksys Network Storage Link with Maxtor OneTouch II (★★★★) find.pcworld.com/45894 find.pcworld.com/45892	Business	\$470 (\$380 +\$90)/\$1.57	Good /3.88/3.64	300GB	Two USB 2.0 (both for drives), ethernet	Very Good	Retrospect Express backup software, OneTouch backup button
Snap Appliance Snap Server 1100 (★★★★★) Best BUY find.pcworld.com/45896	Business	\$649/\$2.60	Good /4.49/3.50	250GB	Ethernet	Very Good	Symantec V2i Protector backup software
Iomega Network Hard Drive 160GB (★★★★) find.pcworld.com/45898	Home	\$280/\$1.75	Fair /2.83/2.95	160GB	Ethernet	Outstanding	Adobe Photoshop Album, Musicmatch software
LaCie Ethernet Disk (★★★★☆) find.pcworld.com/46162	Business	\$599/\$3.74	Very Good /6.94/8.38	160GB	Parallel port for print server, two USB 1.1 (both for drives), FireWire, ethernet	Good	Proprietary software for backing up NAS, plus 30-day trial of CA BrightStor ArcServe for client backup, embedded Windows XP
Ximeta NetDisk (★★★) find.pcworld.com/38642	Home	\$199/\$1.66	Very Good /8.38/7.91	120GB	USB 2.0 (for connecting to PC only), ethernet	Very Good	Proprietary backup software, Norton Internet Security 2004, Symantec V2i Protector Desktop version
Ximeta NetDisk Office (★★★★☆) find.pcworld.com/45884	Home	\$300/\$2.50	Very Good /8.01/7.20	120GB	USB 2.0 (for connecting to PC only), eight ethernet	Very Good	Proprietary backup software, Norton Internet Security 2004, Symantec V2i Protector Desktop version
Tritton Wireless NAS (★★★) find.pcworld.com/45900	Business	\$499/\$2.50	Unacceptable /1.80/2.06	200GB	Ethernet	Poor	Genie Soft Backup Manager, 802.11g wireless

FOOTNOTE: ¹ Speeds listed in megabytes per second. We copied a 3.06GB folder from the tested device to the test bed. We then wrote a 3.06GB folder from the test bed to the tested device. Performance rating is based on a weighted average of these two tests plus times for the copying of a 3.06GB file, the writing of a 3.06GB file, a virus scan, and a file search.

Because they attach directly to your network via an ethernet cable rather than via your PC, networked hard drives and NAS devices sidestep the limited, relatively insecure file- and printer-sharing features built into Windows. And since NAS devices don't require a host, no PC on your network has to be on all the time or suffer the processor slowdown that file and printer sharing can cause.

FOR HOME AND BUSINESS

RIGHT NOW, small businesses are the main users of NAS products, since it's far easier and cheaper to add a NAS device to a network than to add a full server. According to IDC storage systems analyst Brad Nisbet, most small businesses are using NAS primarily for backup and for remote file access among workgroups—even though the products are also designed for file sharing.

NAS, however, has its limitations. The performance of networked drives will never equal that of local hard drives: Network transport speeds (in the range of 11 to 100 megabits per second) are much slower than internal and even external hard-drive transfer rates, which are about 480 mbps for USB 2.0 drives. (The exception would be a gigabit ethernet network, with speeds around 1000 mbps.) Nevertheless, the NAS products we tested are fast enough for backup and printer sharing by a small workgroup.

If you exceed about 25 simultaneous users, you start to tax the performance of even the most capable products in this review. Most of them are intended for smaller networks of 5 to 10 users.

SHARING ENTERTAINMENT

DEVICES THAT FALL into that 5-to-10-user sweet spot are perfect for home networks. In fact, half of the products reviewed here are designed for home users who want to share large collections of music, photo, and video files among their networked computers. Some of these devices even include wireless capabilities—a nice option if you don't already have a wireless access point. As in the business environment, NAS at home also functions as a backup device and removes the need to enable Windows file sharing on an always-on host computer.



THE LINKSYS EFG 250 supports gigabit ethernet.

The Products

THE TEN NAS DEVICES and networked hard drives here range widely in features and capacity—from the \$90 Linksys Network Storage Link, a bring-your-own-drive adapter that we tested with a \$380, 300GB Maxtor drive, to the \$749, 250GB Linksys EtherFast Network Attached Storage EFG 250, which has extensive security features, print serving, routing, and a second open drive bay for adding storage. All the devices we tested support PCs and Macs, and in most cases, Linux systems.

While most of the products are available in a range of prices and capacities, we found the sweet spot to be about 250GB with a street price around \$399, as in the Buffalo LinkStation, our home-use pick (which we also found great for business use). Products vary in their footprint, as well, from book-size devices such as the Ximeta NetDisk to rack-mounted units such as the LaCie Ethernet Disk.

NAS devices for small businesses have one key feature that the home-oriented products do not: password protection of individual folders. The home-oriented networked storage units, such as the Iomega and Ximeta devices, allow anyone with access to the drive to read anything on that drive. In an office environment, private folders are a necessity, and six ►

Bottom line	
	Our pick for the home user, this product is easy to set up and use. Performance was middle of the pack in our speed tests.
	Iomega's entry-level NAS device has built-in 802.11g wireless and USB ports for adding extra hard drives. (250GB version also available.)
	While expensive, this device comes with a print server and a drive bay for adding a second internal drive. (120GB version also available.)
	You don't have to use the Maxtor product; the Linksys will work with any external hard drive. This setup puts two boxes on your desk instead of one. (250GB version also available.)
	Our pick for the small-business user, the Snap Server has the most sophisticated file-sharing features here. (80GB and 160GB versions also available.)
	This no-frills product—strictly for backup and file sharing—offers relatively low capacity.
	The rack-mountable LaCie Ethernet Disk was a top performer but lacks USB 2.0 ports and updated documentation. (800GB version also available.)
	Inexpensive and easy to use, the Ximeta NetDisk requires each user to install proprietary software. (80GB, 160GB, and 250GB versions also available.)
	This product is similar to Ximeta's NetDisk, but it adds an eight-port ethernet switch.
	Tritton's wireless NAS has a limited folder and file-sharing structure and poor documentation.



SNAP APPLIANCE'S
Snap Server 1100 is our
small-business pick.

of the devices in our review are business class: the Buffalo LinkStation, the LaCie Ethernet Disk, the Linksys EtherFast NAS, the Linksys Network Storage Link, the Snap Appliance Snap Server 1100, and the Tritton Wireless NAS.

Business-class NAS devices we looked at tended to cost more and offer more capacity. Our favorite in this class was Snap Appliance's 250GB Snap Server 1100, which has the most sophisticated file-sharing features of the bunch. Next in line was the 250GB Buffalo LinkStation, a feature-packed unit whose cost per gigabyte compares with that of bare-bones models. It offers built-in backup software, print serving, password-protected user accounts for file sharing, and two USB 2.0 ports (one of them for adding an external hard drive). It is so easy to use that it's a good choice for home networks as well.

In the middle of the pack, the 250GB Linksys EtherFast NAS EFG 250 has a second internal drive bay, a print server, and gigabit ethernet. This unit was a top performer when we used it with a gigabit network. LaCie's rack-mountable 160GB Ethernet Disk has USB 1.1 (not USB 2.0) and FireWire ports for adding more storage in the form of external drives.

Linksys's Network Storage Link, a bring-your-own-storage adapter that we tested with Maxtor's 300GB OneTouch II external USB 2.0 hard drive, is a great value. It comes with two USB 2.0 ports so

you can add a second drive to expand capacity or to back up the first drive.

Bringing up the rear was the 200GB Tritton Wireless NAS. It's limited to six shared folders that you can't delete, although you can assign individual passwords to them. It has no print serving or expandability, and it comes with confusing documentation. It includes Genie Soft backup software and serves as a Wi-Fi access point, both of which don't make up for its poor usability and performance.

HOME STORAGE

FOR HOME USE, we looked at five small or medium-size networkable hard drives and NAS units with simple setup, good backup features, reasonable performance, and low cost: the 250GB Buffalo LinkStation (we rated it for small business also); the Iomega Network Hard Drive and Iomega NAS 100d (both 160GB); and the Ximeta NetDisk and Ximeta NetDisk Office (both 120GB). Entry-level NAS devices start at \$200 for 120GB. The clear winner was the Buffalo LinkStation, thanks to its low price and ease of use.

The inexpensive and easy-to-use Ximeta NetDisk and Ximeta NetDisk Office were top performers, but they lack the print serving, expansion ports, and password protection that the Buffalo LinkStation offers. With the Ximeta products, all users get access to all files on the disk, although you can write-protect certain

folders. The products share the same software and have similar features, except that the NetDisk Office adds an eight-port ethernet switch and a security lock slot; it is also slightly larger than the NetDisk.

Unlike other products here, the Ximeta devices use a proprietary file-transport technology that requires installing a utility on each PC with access to the drive. You can't add standard hard drives to these Ximeta units, but you can put multiple Ximeta disks on a network, and they will appear as one large drive to the user. You can also attach them directly to a PC via USB 2.0. The principal strike against both products is that they allow only one user at a time to have write access to a drive in its Multi-OS mode; this may be fine in a two-computer household, but it is an unacceptable limitation in most other situations. Multi-Write mode requires all users to have either Windows XP or Windows 2000 with Service Pack 4, and the same version of the Ximeta driver.

Iomega has offerings on both ends of the networked-storage spectrum, the Network Hard Drive and the NAS 100d. The NAS 100d comes in a bigger box than the Network Hard Drive and includes a Wi-Fi access point and two USB 2.0 ports for adding extra hard drives. The relatively inexpensive Network Hard Drive provides two modes of operation: You can attach the device directly to a computer via ethernet or to a network router. ►

TIP

Use a Fixed IP Address

Even if your router automatically assigns IP addresses to the computers on your network (this is called DHCP addressing), use a fixed IP address instead for the NAS device. Go to the NAS configuration utility and choose a number within the range of your router's DHCP server. Now, any client machine equipped with a Web browser can find your NAS device.

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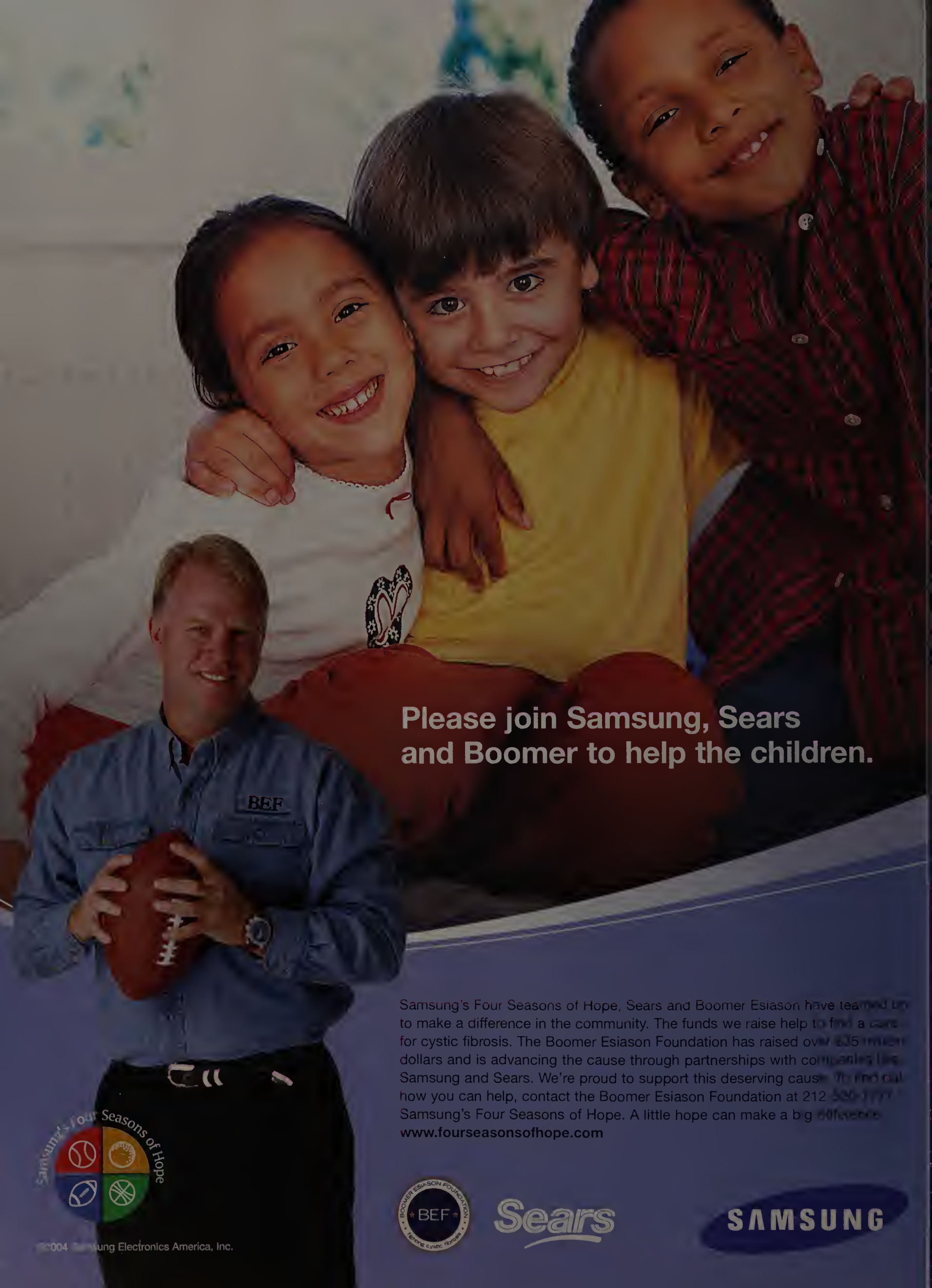
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What We Found

THOUGH THESE storage products have plenty in common, some were easier to use than others. Plus, some features proved very useful, while others didn't.

INSTALLATION

OUR OVERALL EXPERIENCE with installation went better when devices came with Windows-based installation utilities that helped with initial recognition and connection. Most of the products we tested—the Buffalo, Iomega, LaCie, Linksys, and Snap Appliance models—did. To customize options like shared folders, users, groups, and passwords, however, you must use a browser-based configuration utility that's embedded in the unit, just as you would with a router. In fact, if you have ever set up a network router, installing a networked hard drive or a NAS device will feel familiar.

Without an installation utility, that initial connection can be painful, particularly if your network does not use a DHCP server or uses Internet Protocol addressing other than 192.168.1.x, the usual address standard for private networks. Although that standard is the most common, some routers and some business networks will have a number other than 1 before the last number. Once connected, however, things get easier. You can set up most of the NAS devices from any PC or Mac by way of your browser. The Ximeta NetDisk and NetDisk Office, which do not employ TCP/IP, are the exceptions. Instead, they require all network users to install special Windows and Mac utilities in order to use the devices.

EASE OF USE

IT GOES WITHOUT saying that the more complex the features a device offers, the more work is required to use and main-

TIP

Map Your NAS Device

For the quickest, most reliable NAS connections from your Windows PC, be sure to map your NAS device to a drive letter. Go to the *Tools* menu in My Network Places and check the *Reconnect at Logon* box so your NAS device will automatically connect upon startup. Using the same name and password for NAS access as you use for your Windows network log-in will avert many potential connection issues.

tain it. Setting up the user and group accounts and permissions, scheduling and checking backups, and setting up FTP and HTTP servers (for remote access to files through a Web browser)—all require users to be comfortable with the concepts of Windows networking. That said, some devices we tested are much easier to work with than others. ►

OTHER OPTIONS

Networked Storage Devices With Bells and Whistles



MIRRA'S PERSONAL SERVER backs up automatically.

THESE PRODUCTS aren't traditional NAS devices, and we did not test them for this roundup, but their specialized functions will suit some home and small-business users better.

Mirra Personal Server Intended for the backup and sharing of photos and other media on a home network, the Mirra Personal Server doesn't look or work like a standard hard drive. As long as it's turned on, its proprietary backup and synchronization software continuously backs up your files. Even laptops, when reconnected to the network, will start backing up where they left off. You can also share and access files remotely from Mirra's Web site. The Personal Server is pricier per gigabyte of capacity compared with the NAS devices we tested, but some home users may find the added features worth the cost. \$399 (80GB), \$499 (120GB), \$749 (250GB) find.pcworld.com/46160

U.S. Robotics 8200 Firewall/VPN/NAS This bring-your-own-drive device for small businesses is like a network in a box, combining NAS capabilities with a router, a firewall, a print server, and VPN support. It has a four-port ethernet switch, two USB 2.0 ports, and one FireWire port. File-sharing capabilities include FTP access, and the 8200 supports major operating systems for cross-platform networks. \$350 find.pcworld.com/46294

For home users who need file sharing and backup but not password-protected accounts, the Iomega NAS 100d and Iomega Network Hard Drive are the simplest products to maintain. Anyone who's skilled enough to set up a home router or a wireless network can also set up these Iomega devices. Their crystal-clear and mercifully brief manuals explain their streamlined features very well.

We found the two Ximeta NetDisk devices a bit harder to work with, mainly due to their proprietary software drivers. The clear loser in the ease-of-use category was the Tritton Wireless NAS. We tested it because we were intrigued by its

TIP**Drill Down With Permissions**

When setting up shared folders for users and groups, keep in mind that subfolders inherit all the rights of their parent folders. So start with more restrictive permissions at higher folder levels and add rights as you drill down.

wireless capabilities, but its difficult-to-follow instructions required hours to figure out how to get properly connected.

Among the small-business devices, the Buffalo LinkStation was the simplest to use and came with excellent documentation and carefully selected capabilities that

business NAS setup might include a public folder, a private password-protected folder for each employee, and password-protected workgroup folders for shared projects. You may also configure a backup that archives documents from employees' hard disks onto their private folders on the NAS device.

The Buffalo LinkStation, LaCie Ethernet Disk, Linksys EtherFast NAS, Linksys Network Storage Link, and Snap Appliance Snap Server 1100 offer varying degrees of user and group management capabilities. The Snap Server 1100, however, really stood out for its secure file sharing and its illustrated guides for setting up highly secure user and group folders.

Keeping your data secure, especially in an office, also means protecting the drive from theft or removal. Several of the products—the Buffalo LinkStation, the Iomega Network Hard Drive, the Linksys EtherFast NAS, and the Ximeta NetDisk Office—have Kensington-type lock slots. The Linksys EtherFast NAS also has key locks for its two drive bays.

Home users, particularly those who want to keep some folders away from children, may also need private folders. The Buffalo LinkStation and the Linksys Network Storage Link, which are both easy to use, offer good security features.

If you're on a home network and don't need strict password management or lock slots, consider a lower-priced entry-level unit—such as the Iomega Network Hard Drive and the two Ximeta drives—that lacks user or group features. Just remember that anyone with access to such a drive can read anything on it, although you can write-protect certain folders.

WIRELESS ACCESS

WIRELESS CONNECTIVITY on a NAS device can be a bonus if you don't already have a wireless access point, but if you do, it's superfluous. If you plug any NAS device into your Wi-Fi router, you can access it via your Wi-Fi network. The Iomega NAS 100d and the Tritton Wireless NAS offer integrated 802.11g wireless networking but lack WPA encryption and

LACIE'S ETHERNET DISK has FireWire but lacks client backup software.

**TIP****Change the Default Password**

Be sure to change your administrator password during setup. All the NAS devices here come either with no administrator password or with an easy-to-guess one like "admin," and few units will remind you to change it. Similarly, there is often a default guest or anonymous user account, which you should delete or restrict to a public folder.

even novices can operate. The LaCie Ethernet Disk, Linksys EtherFast NAS, Linksys Network Storage Link, and Snap Appliance Snap Server 1100 all had very deep feature sets and thorough and well-written manuals, but they would be best maintained by power users who are comfortable with networking utilities.

FILE SHARING AND SECURITY

ASSUMING YOUR NAS device or networked hard drive supports it, you should set up shared, password-protected folders, which you can assign to users and groups of users. For example, a typical small-

enhanced-G speeds, so they would be slower than a wired ethernet network.

The Iomega NAS 100d does have a potentially useful wireless feature: It can act as a Wi-Fi client as well as an access point—place it within range of your Wi-Fi router, and it will connect to your network wirelessly. But again, we don't recommend doing that, since plain 802.11g

TIP

Monitor Your Storage Capacity

Keep an eye on how full your drives are. If there isn't enough room on them, your backup will fail. Some models have warning lights that let you know when the disks are full.

has much lower throughput than wired ethernet and would slow down everybody's access to the device. Plus, connections can drop unexpectedly due to interference—not something you want happening in the middle of a backup.

BACKUP SOFTWARE

BACKING UP NETWORKED PCs is the most compelling reason to invest in networked storage, and all the models we tested had either integrated backup utilities or backup software to install on your

PC. A secondary concern is backing up the NAS device itself to another storage unit—if it holds data not stored on any local PC or if you work in an office environment where data backups are critical. The Buffalo LinkStation, the Linksys Network Storage Link with the Maxtor One-Touch II Drive, the Snap Server 1100, and the two Ximeta NetDisk units come with software to perform both types of backup.

The best way to back up a NAS or networked drive is to do so directly to another hard drive. The Linksys EtherFast NAS, with its second drive bay, as well as the Linksys Network Storage Link, the Buffalo LinkStation, and the LaCie Ethernet Disk, with their extra USB ports, make this process easy, since you can attach the second drive directly to the first. With these products, the software for backing up the NAS or networked drive is integrated right into the browser-based configuration tools, so you can set up scheduled backups at the same time you set up user accounts and passwords.

The other way to back up a NAS device is over the network to another drive. The Snap Server 1100 and the two Ximeta NetDisk products can sync their entire drives to other Snap Servers and NetDisks, respectively, over a network.

For backing up your computer's files onto the NAS device, the Snap Server 1100 and the two Ximeta devices ship

with Symantec's V2i Protector software, while the two Iomega devices ship with the simple, easy-to-use Iomega Automatic Backup software. The Tritton NAS includes Genie Soft Backup Manager, the Linksys-Maxtor combination uses Retrospect Express, and the Buffalo LinkStation comes with a simple proprietary client backup utility. Curiously, the LaCie Ethernet Disk and the Linksys EtherFast NAS were the only two devices to come without full versions of client backup software; however, LaCie and Linksys say these products work with most major third-party backup utilities.

If you're setting up network backups for all client machines to the NAS, make sure to schedule each machine's backup at different times and at times when the NAS isn't being heavily used (as at night).

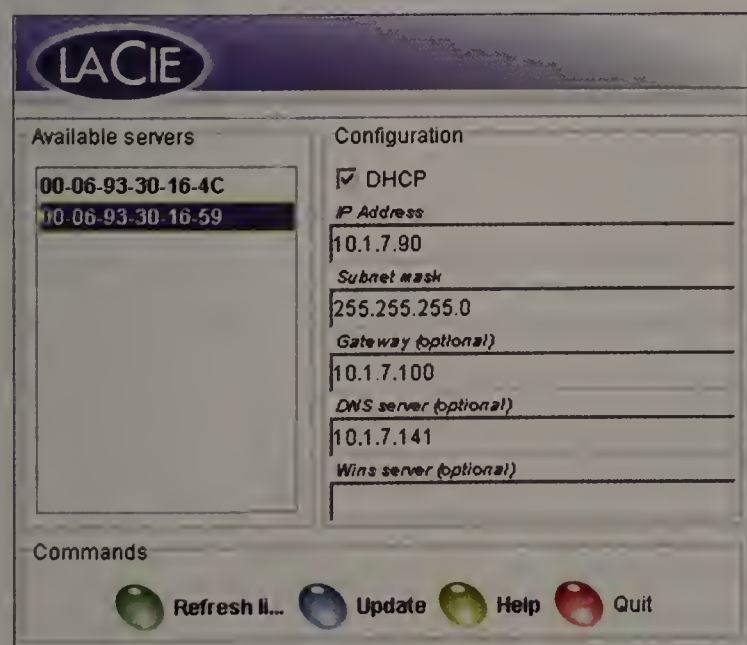
PRINT SERVING

FINALLY, PRINT SERVING is a great benefit for both small workgroups and home networks, and we wish that all of these products included it. Just two of them do: the Buffalo LinkStation and the Linksys EtherFast NAS. They're helpful if you're trying to build a full-featured network on the cheap. However, stand-alone print servers are plentiful and relatively inexpensive, so you do have other options.

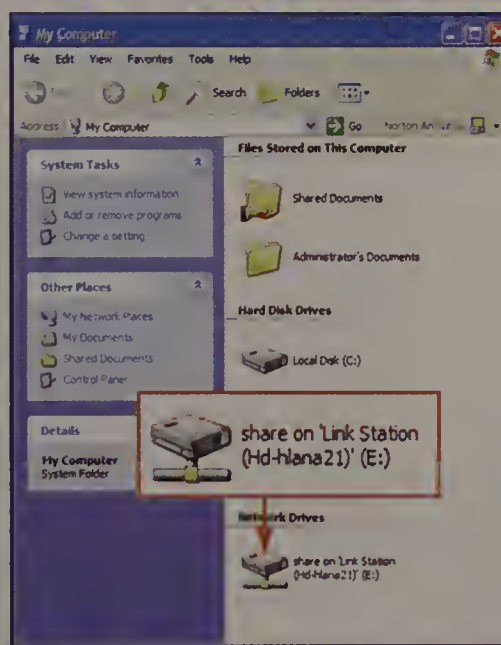
Using the print-serving features on the Buffalo and Linksys devices was straight-

forward, although setup was somewhat complex (as it is with most stand-alone print servers). First you'll need to attach your printer to the NAS device and set up the NAS to serve it, and then you must install the printer on each machine on the network. But once everything is set up, using a print server is almost like having a local printer at hand. ■

Freelance writer Becky Waring is a former editor of New Media magazine.



LACIE'S NETWORK configuration utility can be easy to use, provided you are familiar with Windows networking.



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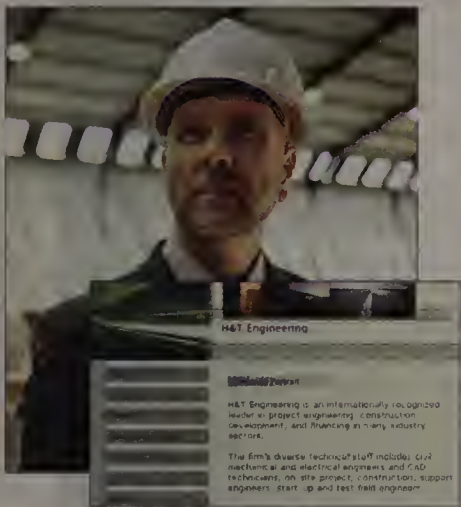
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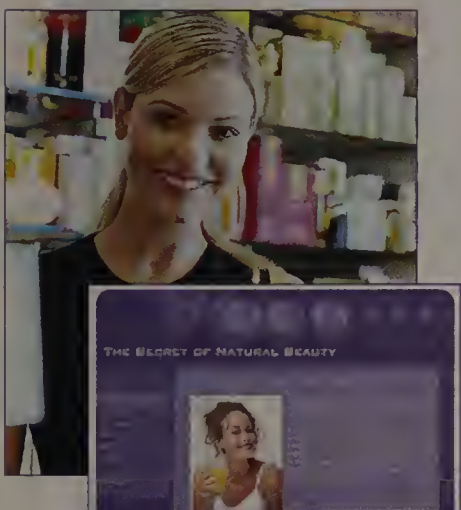
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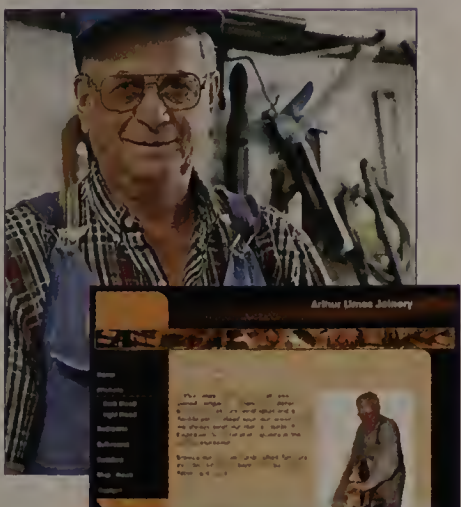
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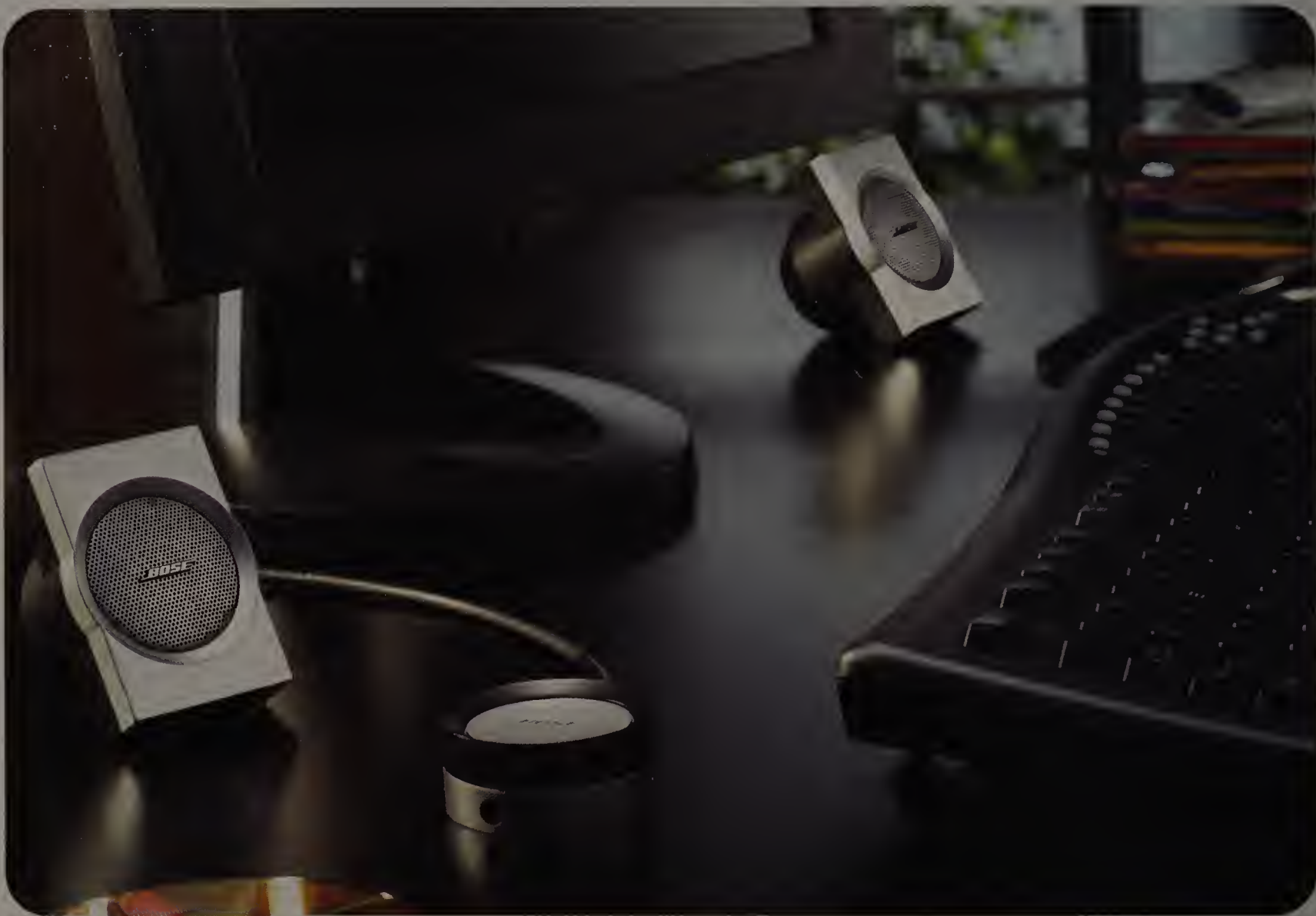
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EDITED BY LAURIANNE McLAUGHLIN

RADIO, REINVENTED

SATELLITE SERVICES SIRIUS AND XM ARE MAKING RADIO COOL AGAIN. AND THE HARDWARE FOR LISTENING IN IS GETTING MORE VERSATILE, MOBILE, AND FUN. **BY HELMUT KOBLER**

WHEN SIRIUS AND XM began offering their fee-based satellite services a few years ago, many radio lovers took note—and then went right back to old-fashioned-but-free AM and FM. But satellite is catching on: XM (www.xmradio.com) now has more than 2 million customers, while Sirius (www.sirius.com) has 800,000.

Why are folks now deciding that satellite radio is worth the not-inconsiderable investment (\$10 a month for XM, \$13 a month for Sirius, and at least \$100 for a satellite-capable radio)? For one thing, both services are ramping up aggressively, adding new stations and signing deals with free-radio stars ranging from

Howard Stern (who will be moving to Sirius in 2006) to the ex-host of NPR's *Morning Edition*, Bob Edwards (now on XM). For another, more satellite radio gear is available, with designs and features that target listeners of all kinds.

Both services offer ad-free music in an array of genres, some 120 stations, and recep-

tion almost anywhere in the continental United States (except under bridges and in tunnels). They share some programming options (such as CNN Headline News), but they also offer exclusive channels, so you'll want to compare line-ups before choosing.

Sports fans face a dilemma. Sirius has long been, er, ►

serious about sports; it holds exclusive satellite rights to NFL football and NHL hockey games. For its part, XM has sole rights to NASCAR, and recently won rights to Major League Baseball for the next 11 years. Hence, your options are either pro football and hockey or pro baseball and auto racing—unless you splurge and get both services and two radios (satellite radios work with either XM or Sirius, not both).

Both services present a rich variety of news, talk shows, comedy, and other content beyond simply music and sports. For additional details about these two networks, see “A Quick Guide to Satellite Radio” (find.pcworld.com/45806).

Whether you choose Sirius or XM, you’ll need a radio designed to work with that particular service. There are plenty of options, but each of the following six devices offers a

feature rarely found in other products, and each is certain to enhance your listening.

XM HARDWARE

Delphi MyFi

UNTIL NOW, satellite radios have been more transportable than portable: You might have been able to remove one from your car, but you couldn’t lis-

ten to it elsewhere without extra-cost complications such as an external antenna and power source. Delphi’s pocketable (though chunky) MyFi breaks new ground as the first truly Walkman-like model, with a battery that’s good for 5 hours and a built-in antenna that lets you listen anywhere you can get a signal. When

you’re someplace satellites don’t reach, you can listen to up to 5 hours of audio that you’ve recorded previously. The device also comes with Tune-Select, which alerts you when favorite music is playing on any channel, and it can display stock quotes and sports scores on its big LCD.

Like Delphi’s SkyFi2 and Roady2, and Sirius’s Sportster, the MyFi has a built-in FM transmitter that can broadcast sound to any radio (although getting a clear signal in major cities can at times be a problem). Bundled earphones let you listen

while on the run; but as with most personal-audio devices, you can dramatically increase the unit’s audio quality by buying better headphones.

At \$350, the MyFi is by no means inexpensive, but it qualifies as the closest thing yet to an all-purpose, go-anywhere satellite radio. And it, unlike most competitors, comes with



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PRODUCT	Price	Service	Type	Comments
Delphi MyFi (★★★★☆) find.pcworld.com/45820	\$350	XM	Portable radio	The first satellite radio with true Walkman-style portability can record 5 hours of programming; not cheap, but comes with everything you need to listen in the car, at home, or on the go.
Delphi XM SkyFi2 (★★★★☆) find.pcworld.com/45810	\$130	XM	Radio	TiVo-style recording saves 30 minutes of radio to memory. FM transmitter allows wireless transmission to any radio. \$70 cradles are available for cars or home stereos.
Delphi XM Roady2 (★★★★☆) find.pcworld.com/45812	\$130	XM	Radio	Small size makes the Roady2 easy to add to a car dash or to tote around; includes FM transmitter. The small screen can be tough to read. No kit is required for connecting to a car stereo.
Cambridge Soundworks PlayDock (★★★★) find.pcworld.com/45814	\$200	XM	Boom box dock	Built-in rechargeable battery makes the PlayDock affordably transportable; includes a fairly powerful (but bass-heavy) subwoofer. Requires the Delphi Roady2.
Sirius Sportster SP-R1 (★★★★☆) find.pcworld.com/45816	\$100	Sirius	Radio	Alerts you when favorite sports teams are playing on air and can display play-by-play scores. \$50 cradles are available for cars or home stereos.
Sirius Sportster Boombox SP-B1 (★★★★) find.pcworld.com/45818	\$100	Sirius	Boom box dock	Lightweight and inexpensive, with good sound, but it's a power guzzler, demanding eight D cells for non-AC use. Requires the Sirius Sportster radio.

a full complement of accessories, including both a home kit and a car kit with external antennas, power sources, and mounting equipment. find.pcworld.com/45820

Delphi XM SkyFi2

THE \$130 Delphi XM SkyFi2 portable receiver is a worthy successor to Delphi's original workhorse radio. This sequel's

Delphi XM Rody2

SIMILAR IN its dimensions to a deck of playing cards, the Delphi XM Rody2 (\$130) is only half the size of the Sky-Fi2, so it's less likely to block controls on your car's dashboard. It's also easier to carry in a pocket between your car and your home. And unlike the SkyFi2 and the Sportster, it comes with every accessory

unit has a couple of distinctive features. First, it looks like a small space heater, which is bad if you seek the sporty form of a boom box, but good if you want your radio to fit discreetly into any room. Second, it has a rechargeable battery, which I ran continuously for about 7 hours. This mobility lets you cart the PlayDock around without an AC adapt-

additional sports teams). And the unit permits you to scroll through scores and text-based play-by-play reports for pro football, baseball, and hockey games, as well as other sports.

I do wish that the Sportster offered more slots for tracking favorite teams and that it had a TiVo-like recording feature, as Delphi's XM SkyFi2 does. But it costs just \$100, and it has a big screen and lots of presets, making it a great all-around choice if you're on the Sirius network. Car and home kits are available for \$50. find.pcworld.com/45816

Sirius Sportster

Boombox SP-B1

THE BEAUTY OF Sirius's \$100 Boombox lies in its portability: This add-on for the Sportster tuner weighs only 6 pounds. You can carry the unit around the house, to the beach, or anywhere else (though operating the Boombox away from AC power means fueling it with eight D batteries, which are rated to last for about 8 hours). Setup is easy: Slip your Sportster into a docking slot on the face of the Boombox and then attach the box's 20-foot antenna (which tucks away into a compartment when it's not in use). The Boombox's quartet of speakers yielded full audio; its power (5 watts per channel) is adequate for most situations but seemed a tad weak in noisy settings. The Delphi MyFi is an even more portable unit for personal listening, but the Boombox is a good choice if you plan to share the music. find.pcworld.com/45818 ■

Helmut Kobler is a filmmaker and technology writer. He lives in Los Angeles.



▲ Cambridge SoundWorks
PlayDock XM Portable

▲ Sirius
Sportster
Boombox SP-B1

best feature, without question, is a TiVo-like capability that saves the most recent 30 minutes of radio to internal memory, so you can pause or replay whatever you are listening to. This feature let me replay a favorite song again and again, thanks to Back and Forward buttons. (Be aware, though, that the radio clears out its 30-minute buffer each time you turn the device off.)

Like the MyFi, the SkyFi2 has a built-in FM transmitter and TuneSelect, a feature that helps you track down your favorite music. The unit's big LCD screen is easier to read than its predecessor was, in all kinds of light, and you can arrange for it to display stock quotes, sports scores, or the time of day. Car and home kits are available for \$70. find.pcworld.com/45810

you need for in-car listening.

This little radio does make some compromises, however: Its small screen can be difficult to read; it lacks the Sky-Fi2's cool 30-minute memory; and though it can show you your 20 favorite delayed stock quotes, it can't display sports scores and other information. But if size matters, the Rody2 is a great, economical choice. find.pcworld.com/45812

Cambridge SoundWorks PlayDock XM Portable Speaker System

THE PLAYDOCK is a \$200 transportable "home base" system that turns Delphi's XM Rody2 radio into a boom box. It provides two primary speakers and a 15-watt powered subwoofer that sounded quite good, though slightly bottom-heavy, to my ear. The

er, all the while saving money on batteries. The system tips the scales at a rather startling 14 pounds; so despite having a convenient built-in handgrip, it's more cumbersome than a traditional boom box. Nevertheless, the PlayDock rates as an unconventional (albeit slightly pricey) winner. find.pcworld.com/45814

SIRIUS HARDWARE

Sirius Sportster SP-R1

MINDFUL OF ITS exclusive contract to broadcast all NFL games, Sirius has given the Sportster some unique features for football fans. For starters, when your favorite team is playing, the Sportster will sound and display an alert and take you directly to the appropriate station (the radio provides alerts for 20 favorite songs and artists, too—or for

GADGET FREAK

DAN TYNAN

GOLDEN RECEIVERS

SPEAKERS GET all the glory, but your audio/video receiver is the hub of your home entertainment universe. Yet many guys swap out receivers as frequently as they change hair-styles—once every 15 years.

Today, for \$300 to \$400 you can buy a receiver that powers your speakers and controls your radio, TV, video players, digital recorders, and other components. Here are five things many buyers overlook.

Get the hookups: The biggest mistake is choosing a receiver with the incorrect connections, says Grant Garrett, an agent with Best Buy's Geek Squad (www.geeksquad.com) high-tech troubleshooters. If you want to plug in a DVD player and a digital video recorder, buy a unit with multiple component (red-green-blue) inputs. HDTV lovers should look for higher-quality DVI or HDMI hookups. Have a separate DVD-Audio or Super Audio CD player? You may want a high-speed FireWire port. And if you want to blast MP3s on your stereo, look for ethernet jacks or Wi-Fi card slots for connecting to a home network, or a USB port for

plugging in a portable player.

Try stereo à la mode: Surround-sound modes are like reality TV shows—every time you turn around, you see a new one. Here's some simple advice: If you have only two speakers, look for "virtualiza-



tion" features that simulate surround sound using just two channels. Want to play your old CDs or VHS tapes on a surround-sound system? Look for a unit that features *matrixing*, which uses Dolby ProLogic II or DTS: Neo6 to convert two-channel recordings into multichannel sound. To learn more about surround sound, check out Crutchfield's excellent consumer guides (find.pcworld.com/45804).

Zone out: If you want music in more than one room, get a receiver that supports remote zones, advises Bob Hazel-

wood, product manager for Cambridge Soundworks. For example, some 7.1 systems let you set up a 5.1 home theater in the den and hang two speakers in another room, so the kids can watch *Finding Nemo* while you listen to the Flaming

Lips. Look for a unit that uses existing amplifier channels for multiple zones, so you don't need another receiver to drive the second set of speakers.

Be acoustically correct: Most of us can't afford to hire a hi-fi geek to perfectly place all our speakers, says Mohsin Imtiaz, a marketing manager for Texas Instruments, which makes the digital signal processors in many receivers. But if you get a receiver with built-in "room correction," you can place a microphone where you'd usually sit; the unit then optimizes speaker settings to match the room's acoustics.

Take it easy: You shouldn't need a Ph.D. in stereotronics to operate your gear. An easy-to-use receiver usually has a well-designed remote, notes Lance DuChateau, consumer marketing manager for Best Buy. Look for one that groups similar functions (like play,

NEXT UP

Centralized Entertainment

DEDICATED Devices (DDI) offers one solution to people who want to centralize all their digital media and serve it from one place: its \$2250 Digital Distribution Center server, coupled with its \$299 Digital Player. The server has



a 120GB hard drive and acts as a residential gateway and router, connecting via ethernet to your network and the Digital Players. Players hook up to your TV and stereo to feed in the content stored on the server. The system is meant to go into prewired homes; you can get the devices only through professional installers, such as those in the Leviton network. find.pcworld.com/45988

pause, and rewind for DVD playback) by color, and that lets you program macros so you can press a single button to perform complex tasks (like turning on your TV and DVD player and switching inputs to watch a movie). The remote gets bonus points for an LCD, or if the buttons light up so you can see them in the dark.

Follow these tips, and you can walk into any stereo store with confidence. And while you're out, stop by the hair salon and update your style. You know you need to. ■

Contributing Editor Dan Tynan gets a new 'do every seven years.

POWER



REDEFINED



The thrill of victory was never quite so scintillating. The cutting edge features of Antec's NeoPower let you take maximum advantage of all the latest technology - now. Like an advanced cable management system. Native support for PCI-Express graphics cards. Full ATX12V v2.0 compliance. Plus 480 Watts of supremely stable power with a single 120mm fan for virtually silent operation. And that's just the beginning. For the complete story on NeoPower 480 visit www.antec.com or your local Antec retailer today.

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TOP 100

EDITED BY THE REVIEWS STAFF

SPOTLIGHT: TV TUNERS

THE IMPRESSIVE play and record features of the Hauppauge WinTV-PVR-150 and ATI TV Wonder USB 2.0 help make them our top choices for putting TV on your PC.



TV Tuners for Your PC

You don't have to buy a pricey Media Center PC or get a TiVo to record your favorite television shows. For as little as \$89, you can outfit your PC with a TV tuner that will let you pause and rewind live TV and record shows to your hard drive.

TV tuners for the PC come in two flavors: PCI cards and external USB boxes. They make it a snap to watch full-screen, full-motion video on a monitor, or keep an eye on a show in a smaller window while surfing the Web. We tested two PCI cards (ADS Tech's \$89

Instant TV +FM PCI and Hauppauge's \$99 WinTV-PVR-150) and three USB devices (ATI's \$124 TV Wonder USB 2.0 with optional remote control, AVerMedia's \$99 UltraTV USB 300, and the \$140 Hauppauge WinTV-PVR-USB2). Both the Hauppauge WinTV-PVR-USB2 and the ADS Tech come with an FM tuner and an antenna, but only the Hauppauge can receive FM signals via coaxial cable (assuming that your cable TV company provides the service).

All of the devices have inputs for coaxial, composite,

113 DESKTOP PCs

The fastest gaming system we've ever tested. Plus, the most recent crop of entertainment PCs running Windows XP Media Center.

115 NOTEBOOK PCs

An IBM ThinkPad that sports a fingerprint reader and lasts for 5.5 hours on a single battery charge.

117 DIGITAL CAMERAS

Three new advanced cameras make the chart this month. One of these, the 8-megapixel Nikon Coolpix 8800, features built-in vibration reduction.



119 COLOR LASER PRINTERS

Low-priced models put color laser printing within reach—one unit costs only \$449.

121 MORE REVIEWS

Find top-rated LCD monitors, PDAs, and internal DVD drives from previous *Top 100* charts.

and S-Video cables. To test the tuners, we used live TV and coaxial inputs. All of them delivered acceptable video and audio: Though image quality varied a little, the differences were too slight to affect a buying decision. Still, the images might have been crisper if we had used a set-top box and connected via composite or, even better, S-Video. You can also use the composite and S-Video inputs to watch video from an external video source, such as a digital camcorder or a VCR.

CLUTTER-FREE OR USB?

YOU MIGHT EXPECT that a PCI-based tuner would deliver smoother video and recordings with fewer skips than an external device. All five tuners, however, performed similarly on our test machine, a 2.4-GHz Pentium 4 PC equipped with USB 2.0 ports. (Note that using a PC equipped with USB 1.1 ports might slow down the performance of a USB tuner.) So the choice comes down to a matter of cost, features, and preference.

If you want to keep your desk free of clutter, it's hard to beat a PCI tuner. Once you've installed it and closed your computer's case, it stays completely out of the way. Furthermore, as a general rule, PCI tuner cards are slightly less expensive than their external counterparts.

On the other hand, USB tuners are a great solution if your computer's PCI slots are full, or if you want to watch TV on a laptop. But some USB tuners are bulky enough to be ungainly, especially when they have a bunch of cables sticking out of them. This isn't a problem for the featherweight AVerMedia UltraTV USB 300. A bit larger than a deck of cards, it's the most compact of the three we looked

at and the only one that didn't need an AC adapter (it draws its power from the USB port). At the other end of the scale, the Hauppauge WinTV-PVR-USB2 is almost four times larger but comes with a base for standing it up on its side.

Setting up a USB tuner is quicker than installing a card, but the steps are roughly the same. (The AVerMedia is the only USB box with an audio output that connects to the PC's sound card.) After click-

and channel changing are intuitive. In contrast, merely finding the volume control on the overly slick ATI TV Wonder's interface turned out to be a major chore.

TIVO WITHOUT THE TIVO

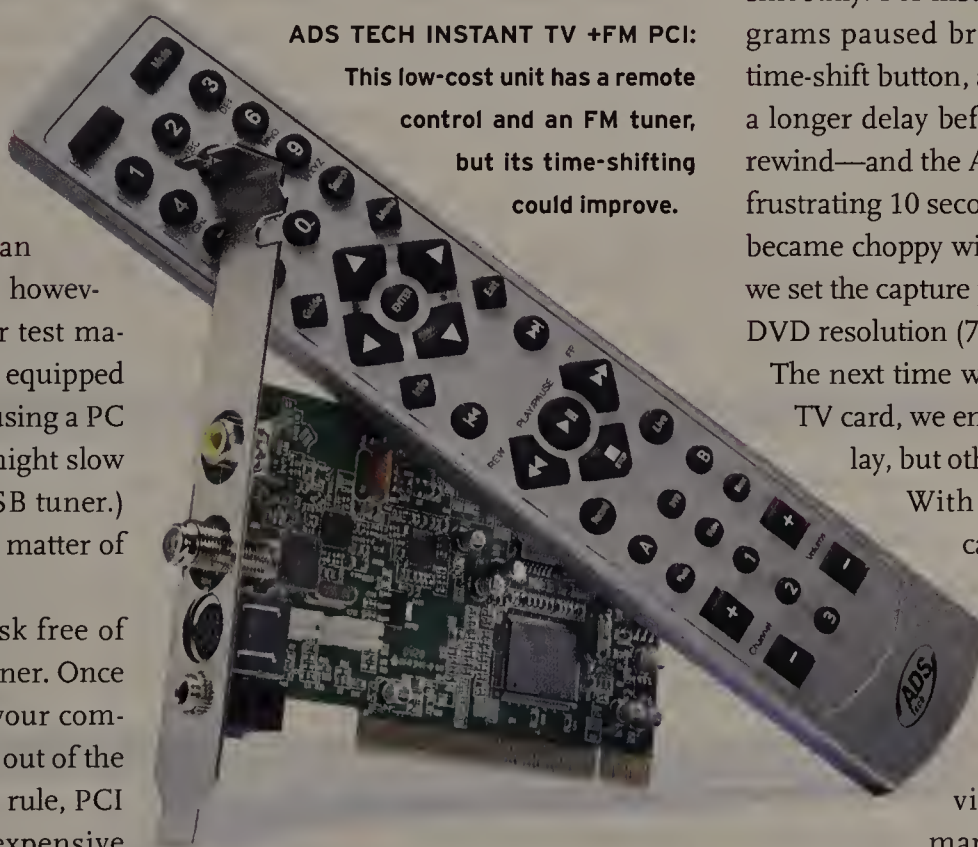
PRESSING PAUSE OR a dedicated time-shift button on these devices makes them time-shift just like a TiVo; they buffer the signal using the PC's hard disk. Unfortunately, this process didn't always work smoothly. For instance, while all the programs paused briefly when we hit the time-shift button, a few of them imposed a longer delay before we could pause or rewind—and the ADS Tech delayed for a frustrating 10 seconds. In addition, video became choppy with the ADS card when we set the capture parameters to standard DVD resolution (720 by 480).

The next time we installed the Instant TV card, we encountered no such delay, but other problems persisted.

With both the Instant TV card and the AVerMedia UltraTV USB 300, when we tried to record time-shifted video at high-quality encoding settings, the video image degraded markedly. MPEGs on the

ADS played back smoothly, but the AVerMedia's files looked choppy. In both cases, the lower video quality during recording and time-shifting made watching TV more difficult, defeating the feature's purpose.

Both of these products rely on software to encode video, but so does the ATI TV Wonder USB 2.0, which did not suffer from image degradation. It played back perfectly regardless of quality settings, and it has jog and shuttle controls for ▶



ADS TECH INSTANT TV +FM PCI:

This low-cost unit has a remote control and an FM tuner, but its time-shifting could improve.

ing through a few dialog boxes about your location and the input type, you're pretty much ready to start watching TV. But first the software needs a few minutes to scan your cable connection for available channels. Most of the software included with these products has a similar design, but there are some differences. For instance, though ADS Tech's Instant TV interface doesn't look as polished as some of the others, the controls it provides for volume

moving back and forth through time-shifted video at varying speeds. Hauppauge's products didn't show any image-quality loss while recording time-shifted video either, though they did require us to wait before we could pause or rewind such video. Both Hauppauge tuners perform hardware-based encoding.

Recording video is more straightforward. In all cases, just pressing the record button on the external remote control or in the on-screen control panel starts the process. The Hauppauge WinTV software has a one-touch-recording (OTR) feature like those found on many VCRs; repeatedly pressing the button increases the recording time in 15-minute increments. ATI TV's OTR feature lets you preset how long it will record, but you can't adjust the increment length from the control panel.

Scheduling a recording is reminiscent of scheduling on a TiVo-style personal video recorder (PVR). Most of the tuners work with TitanTV.com, a Web site that provides TV listings; the only exception is the ADS card, which doesn't work with an



THE SMALL, LIGHTWEIGHT AverMedia UltraTV USB 300 is well suited for travel, though it lacks a remote control.

electronic program guide (EPG). The ATI comes bundled with GuidePlus+ software, which is tightly integrated into the ATI Multimedia Center software suite; a preview window within the listings window lets you watch TV as you navigate the schedule. The TitanTV schedule has no preview window. GuidePlus+ also pro-

vides listings for U.S. and Canadian stations, while TitanTV is U.S.-only.

Scheduling a recording was simple with both EPGs, but GuidePlus+ let us move more easily between the schedule and our TV window. In GuidePlus+, clicking on a program while it's showing pulls the program up in ATI's TV viewing window; there's no similarly easy shortcut in the Hauppauge or AverMedia PVR software. We limited our testing to the EPG included with each device, but other options exist, such as Beyond TV and SageTV.

The AverMedia UltraTV USB 300 is the only TV tuner here that performs picture-in-picture, allowing you to watch both live TV and playback of recorded video simultaneously. (It doesn't display two channels of live TV at once, however.)

THE BURNING QUESTION

ALL OF THE programs that are included with these tuners can record video as DVD- or VideoCD-compliant MPEG files, which makes the devices useful not only for archiving your favorite episodes of

TOP 100

TV Tuners: Kick Back and Watch PC

YOU DON'T NEED A MEDIA CENTER PC to watch TV at your computer. We tested five low-cost options.

PCI CARD TV TUNER	Features and specifications		Performance	Comments
Hauppauge WinTV-PVR-150 Best Buy \$99 (★★★★☆) find.pcworld.com/45828	- Infrared remote control - Infrared blaster	- TitanTV electronic program guide - MPEG-1, MPEG-2, hardware-based encoding - Ulead DVD MovieFactory 3 SE, Nanocosmos NanoPEG Editor 2.3	- Setup: Very Good - Play/record: Very Good - Time shifting: Very Good	You can manually fine-tune channel reception, and it's easy to capture and manage stills. Time-shifted video looked smooth while the device recorded at high quality settings. Includes an IR blaster.
ADS Tech Instant TV +FM PCI \$89 (★★★) find.pcworld.com/45826	- Infrared remote control - FM tuner, antenna input only	- No electronic program guide - AVI, MPEG-1, MPEG-2, MPEG-4, software-based encoding	- Setup: Very Good - Play/record: Good - Time shifting: Good	Recording at high quality settings caused image quality on time-shifted video to degrade; the recorded MPEGs, however, played smoothly. Some remote control functions are difficult to decipher.
USB TV TUNER	Features and specifications		Performance	Comments
ATI TV Wonder USB 2.0 Best Buy \$124 ¹ (★★★★☆) find.pcworld.com/45830	Radio-frequency remote control	- GuidePlus+ electronic program guide - Variable rewind/fast-forward speeds - AVI, MPEG-1, MPEG-2, MPEG-4, WMA, software-based encoding	- Setup: Very Good - Play/record: Outstanding - Time shifting: Outstanding	Best external remote. Recording at high quality settings didn't degrade picture quality of time-shifted video. GuidePlus+ recording is well integrated. Toolbar offers ready access to other features.
Hauppauge WinTV-PVR-USB2 \$140 (★★★★) find.pcworld.com/45834	- Infrared remote control - FM tuner, antenna, or coaxial input	- TitanTV electronic program guide - MPEG-1, MPEG-2, hardware-based encoding - Ulead DVD MovieFactory 2 SE	- Setup: Very Good - Play/record: Very Good - Time shifting: Very Good	Recording at high quality settings didn't affect picture quality of live TV. You can manually fine-tune channel reception. Easy to capture and manage stills. External remote can be confusing.
AverMedia UltraTV USB 300 \$99 (★★★★☆) find.pcworld.com/45832	No remote control available	- TitanTV electronic program guide, picture-in-picture² - AVI, MPEG-1, MPEG-2, software-based encoding - Ulead DVD MovieFactory 2 SE and VideoStudio 7 SE	- Setup: Very Good - Play/record: Good - Time shifting: Good	Its small size and light weight suit this tuner for toting with a notebook. When the device recorded at high quality settings, time-shifted video appeared choppy.

CHART NOTE: Street prices are as of 11/19/04. **FOOTNOTES:** ¹ Price includes optional Remote Wonder remote control; see find.pcworld.com/45912. ² Picture-in-picture function is limited to simultaneously displaying one TV channel and playing back recorded video; it cannot display two live TV signals at once.

Smallville but also for burning video captured from a VCR or camcorder. In case you don't already have video-editing or DVD-burning software, some tuners are bundled with one or the other. The AVerMedia is the only one here that comes with both (Ulead VideoStudio 7 SE and DVD MovieFactory 2 SE), though Hauppauge's WinTV-PVR-150 does include an MPEG file splitter for trimming unwanted footage (that is, commercials). The ATI TV Wonder USB 2.0 comes with neither editing nor DVD-burning software.

SET-TOP BOX WRANGLING

IF YOU HAVE digital cable or a satellite receiver, you'll have to change television channels on the set-top box, unless the TV tuner has an infrared blaster—a cable connected to the TV tuner that beams channel-changing commands to the set-top box. Of the five tuners reviewed here, only the WinTV-PVR-150 comes with an IR blaster. The absence of this feature in other products in our roundup makes scheduling recordings a hassle: You must remember to change the channel on your set-top box prior to recording.

The ultimate TV convenience is, of course, the remote control. The AVerMedia UltraTV USB 300 is the only tuner here that neither comes with a remote nor offers one as an option. The ADS Tech and Hauppauge PCI tuners include an infrared remote. To use those devices, we had to plug the IR receiver's cable into the card and then place the sensor end in the remote's line of sight. The Hauppauge USB tuner has a built-in infrared sensor, so we had to keep the box in view.

We tested the ATI TV Wonder together with the company's optional

HAUPPAUGE'S WINTV-PVR-USB2 comes with an infrared remote and FM tuner and simplifies capturing and managing stills.

HDTV

HDTV Cards: Worth the Extra Cost?

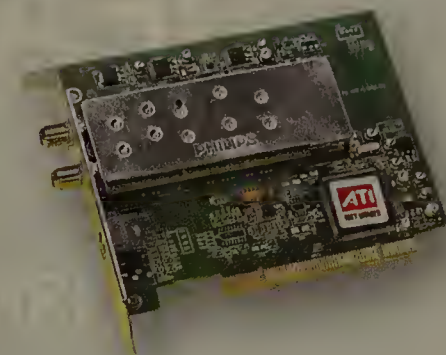
WHETHER YOU SHOULD SPEND the additional money needed to purchase an HDTV tuner card depends less on the card itself than on your TV reception.

As we noted in our review of the HDTV Wonder (find.pcworld.com/43902), hills or other obstructions may impede reception. In our offices in downtown San Francisco, where we tested two HDTV tuner cards, we received 15 digital channels over the air on a weekday afternoon. Only 4 of the 15 broadcasts were high-definition, but those channels had very crisp picture quality.

We tested the \$190 ATI HDTV Wonder and the \$175 DVico FusionHDTV 3 Gold Q on a Dell Dimension 8400 PC with a 3.4-GHz Pentium 4 and 1GB of RAM, and viewed the transmissions on a 17-inch LCD. Both of these cards come with an external remote control, but only the HDTV Wonder also includes an antenna.

We watched the same baseball game on HDNet with both cards. The picture looked tremendously sharp in both cases. Movement appeared choppy on the HDTV Wonder card; on the DVico, motion seemed smooth but dropouts of video and audio were more frequent. When we launched additional programs, those applications ran more slowly than normal, and some-

times the DVico application crashed. Both HDTV programs use a lot of CPU bandwidth, a factor that could limit your ability to check player stats and send instant messages while watching a ballgame.



ATI'S HDTV WONDER displays high-definition broadcasts in stunning detail, but reception may be spotty.

times the DVico application crashed. Both HDTV programs use a lot of CPU bandwidth, a factor that could limit your ability to check player stats and send instant messages while watching a ballgame.

In view of the current dearth of high-def broadcasts, however, you'll want a backup plan. The HDTV Wonder has a second coaxial input, so you can connect both the antenna for digital broadcasts and your terrestrial cable TV feed. You do have to use two different applications—one for digital TV, another for analog TV—and they won't run simultaneously. But ATI's Multimedia Center software offers more features than DVico's FusionHDTV program.

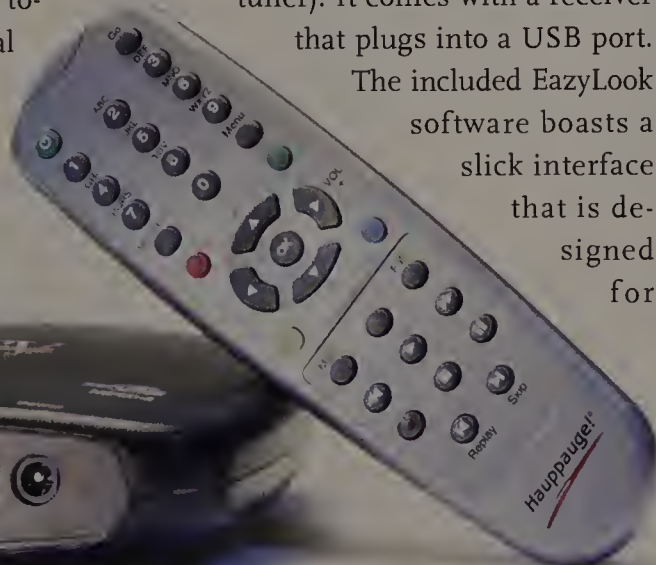
—Eric Butterfield

TV viewing and channel changing at a distance. The software defaults to a full-screen TV image, and the interface looks like that of any PVR we've seen.

These attractive features, along with undiminished image quality while the unit records time-shifted video, make the ATI TV Wonder USB 2.0 the best of the external tuners. If you have a set-top box and an open PCI slot, however, the Hauppauge WinTV-PVR-150 should be your first choice: Its infrared blaster will ensure that your scheduled recordings don't go awry.

—Emru Townsend

Emru Townsend is a freelance writer in Montreal and is the editor of *Frames per Second* magazine (www.fpsmagazine.com). Eric Butterfield is an associate editor for PC World.



DEAD BATTERY?

OURS ISN'T DON'T BELIEVE US?

PC WORLD

"...blows away what's available today"

LAPTOP

"Thin Light and out of sight"

c|net

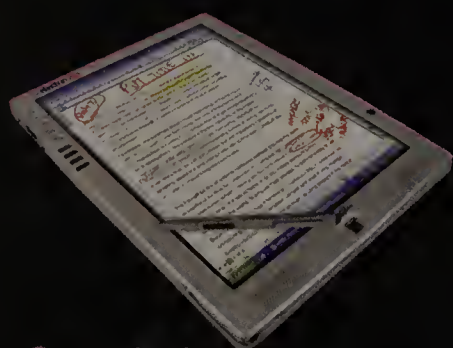
"...unexpected luxuries..."

pdabuyersguide

"...outlast any other consumer tablet"



Prime Contractor



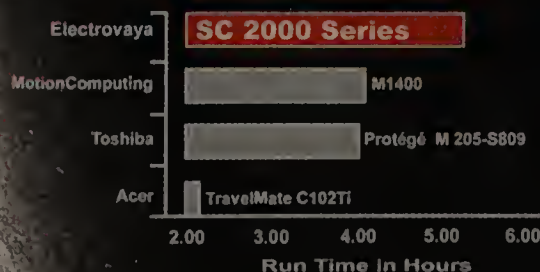
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PC Magazine, Battery Mark 2004



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INSIDE INFO

IN THE CHARTS

EDITED BY THE REVIEWS STAFF

Media Center 2005 PCs Take Center Stage Among Desktops

THIS MONTH'S *Top 15 Desktop PCs* chart highlights two trends: the emergence of powerful new gaming systems that have sophisticated style, and the rapidly growing selection of Media Center PCs, which expand PC-based home entertainment beyond gaming.

Examples of the former are two new Athlon-fueled machines that sit atop the power section of our chart: Alienware's Aurora 64 FX-55 and ABS's Ultimate M5-64. Both of these systems are visually appealing without shouting "I'm just for games." Not only are they the two fastest systems on the chart, but they also produced outstanding sound with their high-end Creative Sound Blaster Audigy 2 cards and their 5.1-channel Logitech speakers (the X-530 and the Z-680, respectively).

In our value section, there's a new game system for people on a strict budget. The CyberPower Gamer Ultra 7500 Elite is a bargain machine that costs just \$999. This midsize tower has seven open bays and three free slots, and it received a Good score in setup and ease of use. The system's performance, graphics, sound quality, and appearance don't measure up to those of the power gaming models; but at that low

price, it may be worth a look.

Last month we evaluated the new crop of entertainment PCs that run Windows XP Media Center Edition 2005. With one of these systems, you can tune in favorite TV shows, watch and burn movies, play CDs, and show off your digital photos. Four of the January



ALIENWARE'S Aurora 64 FX-55 is the fastest PC we've tested.

machines appear on the chart this month: Alienware's DHS 5 and HP's Media Center PC M1050y in the power section, and Sys Technology's MediaMax and Medion's M3Director 5100 among value models. The two power systems perform well but give new meaning to hefty pricing—mainly due to their outstanding wide-

screen monitors. And the argument in favor of the value units? They cost one-third as much as the power machines.

NOTEBOOKS

A REFRESH OF a thin-and-light IBM laptop that has a biometric security feature debuts this month at number five on the desktop replacements list. The new ThinkPad T42 has a fingerprint reader, a first for IBM. This device employs a state-of-the-art slide sensor, located in the right-hand palm rest of the notebook. A slide sensor requires more-precise finger placement than a postage-stamp-size sensor does, but it records more biometric information for enhanced security, according to IBM. The ThinkPad T42 is a classy portable capable of lasting 5.5 hours on a single battery charge, courtesy of the high-capacity battery that comes standard with the configuration we tested.

We also reviewed the Sharp AL27, a laptop with an unusual case color for a Windows PC: white. The AL27 stands out for its ability to serve as a USB hard drive when it is connected to another PC. Unfortunately, the AL27 scored too low to make our all-purpose notebooks list, due largely to its short 1.8-hour battery life.

Plenty of Printers

ARE YOU READY to jazz up your monochromatic text documents with a splash of color? Laser printers are getting more affordable and more versatile—as reflected in this month's updated *Top 10 Printers* chart, which focuses on workgroup and corporate color lasers.

More on the Web

PC World uses its industry-standard benchmarking application, WorldBench 5, to evaluate desktop PCs, notebooks, and tablet PCs. We run a number of real-world applications performing real-world computing tasks. For more information on the WorldBench 5 tool, visit find.pcworld.com/44262. Browse to find.pcworld.com/10860 for more details about *PC World's* Star Ratings.

The Top 100 Team

Freelance writers Andre Kvitka and Scott Plamandan, Contributing Editor Carla Thornton, and PC World editors Laura Blackwell, Eric Butterfield, Tracey Capen, Kalpana Ettensan, Rebecca Freed, Melissa J. Perensan, Narasu Rebbapragada, Dan Sommer, and Alan Staffard contributed to the Top 100 section this month. Ulrike Diehlmann, Julio Gianabile, Elliott Kirschling, Jeff Kuta, Tany K. Leung, Thomas Luang, and William Wang of the PC World Test Center tested the products that we reviewed for this section, with logistical support provided by Julian Weatherby.

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TOP 15 DESKTOP PCs

★ Products in this chart are ordered by star rating. Visit find.pcworld.com/46154 for reviews of all products tested this month and ranked in this chart.

	POWER SYSTEM	Features and specifications ¹		Performance	Bottom line
1	Alienware Aurora 64 FX-55 \$3699 (★★★★★ NEW) find.pcworld.com/45562	2.6-GHz Athlon 64 FX-55 320GB drive space (RAID) - DVD±RW, OVO-ROM drives	19-inch NEC LCD monitor 256MB ATI Radeon X800 Pro graphics - Logitech X-530 speakers	- WorldBench 5 score: 110 - Graphics: Outstanding - Design: Good	Blazing performance pushes this well-equipped, nicely priced gaming system to the top of the chart.
2	ABS Ultimate M5-64 \$3899 (★★★★★ NEW) find.pcworld.com/45558	2.6-GHz Athlon 64 FX-55 148GB (RAIO), 200GB drive space - DVO±RW, DVO-ROM drives	19-inch Samsung LCD monitor 256MB EVGA-E GeForce 6800 Ultra graphics - Logitech Z-680 speakers	- WorldBench 5 score: 107 - Graphics: Outstanding - Design: Good	Loaded system has industrial-strength metal case and liquid-cooled CPU. Three hard drives in this configuration.
3	Dell Dimension 8400 \$2999 ² (★★★★★ Oct 04) find.pcworld.com/43544	3.6-GHz Pentium 4 560 320GB drive space (RAID) - DVD+RW, CO-RW drives	19-inch Dell LCO monitor 256MB ATI Radeon X800 XT graphics - Dell 5650 speakers	- WorldBench 5 score: 98 - Graphics: Outstanding - Design: Fair	Quickest Pentium system on the chart; powerful graphics and an attractive LCO are a winning combo.
4	Alienware DHS 5 \$5578 (★★★★★ Jan 05) find.pcworld.com/45194	2.2-GHz Athlon 64 3500+ 250GB drive space - DVD±RW/-RAM drive	30-inch BenQ LCD monitor 128MB ATI Radeon 9800 Pro graphics - Klipsch ProMedia Ultra 5.1 speakers	- WorldBench 5 score: 92 - Graphics: Outstanding - Design: Outstanding	Our favorite Media Center PC in a stereo-component style; terrific LCD TV accounts for \$3450 of the price.
5	Micro Express MicroFlex 38A Best Buy \$2699 (★★★★★ Nov 04) find.pcworld.com/43982	2.4-GHz Athlon 64 3800+ 250GB drive space - OVO±RW, CO-RW drives	19-inch ViewSonic LCO monitor 256MB ATI Radeon X800 XT graphics - Logitech Z-560 speakers	- WorldBench 5 score: 106 - Graphics: Outstanding - Design: Very Good	Not the most interesting design, but it runs fast, sounds great, and displays impressive graphics.
6	Polywell Poly 939VF-FX53 \$2995 (★★★★★ Nov 04) find.pcworld.com/43988	2.4-GHz Athlon 64 FX-53 148GB drive space (RAIO) - OVO±RW, DVD-ROM/CD-RW drives	19-inch AOC CRT monitor 256MB EVGA-E GeForce 6800 Ultra graphics - Creative Inspire T7700 speakers	- WorldBench 5 score: 105 - Graphics: Outstanding - Design: Very Good	Has top-notch performance, but we would have expected better than a 19-inch CRT at this price.
7	HP Media Center PC M1050y \$5025 (★★★★★ Jan 05) find.pcworld.com/45242	3.8-GHz Pentium 4 570 400GB drive space - DVD+RW, OVO-ROM drives	23-inch HP LCD monitor 256MB ATI Radeon X600 graphics - Klipsch ProMedia Ultra 5.1 speakers	- WorldBench 5 score: 96 - Graphics: Very Good - Design: Very Good	Ultimate home system comes with slot for removable hard drive. Wide-screen LCO adds \$2000 to the total.
VALUE SYSTEM					
1	Sys Technology MediaMax \$1445 (★★★★★ Jan 05) find.pcworld.com/45208	3.2-GHz Pentium 4 540 120GB drive space - OVO±RW drive	17-inch Planar LCO monitor 128MB PNY Verito GeForce FX 5200 graphics - Sys MediaMax speakers	- WorldBench 5 score: 84 - Graphics: Very Good - Design: Very Good	Looks more like a stereo component than like a PC; has stand-alone radio, DVD, and CD options.
2	IBM ThinkCentre A51p \$1627 (★★★★★ NEW) find.pcworld.com/45626	3-GHz Pentium 4 530 160GB drive space - DVD-ROM, CD-RW drives	17-inch ThinkVision LCD monitor 64MB ATI Radeon X300 Pro graphics - Cyber Acoustics CA-3090 speakers	- WorldBench 5 score: 83 - Graphics: Very Good - Design: Good	Tool-less design and advanced security features distinguish this good-looking, all-business black tower.
3	Dell Dimension 4700 Best Buy \$1299 ³ (★★★★★ Oct 04) find.pcworld.com/43542	3-GHz Pentium 4 530 160GB drive space - DVD-ROM, CO-RW drives	17-inch Dell LCD monitor - Integrated Intel 915G graphics - Dell ADA-425 speakers	- WorldBench 5 score: 83 - Graphics: Good - Design: Fair	Fine for both home and business computing; one of the first value PCs with the new PCI Express bus.
4	Amax Kloss i915B \$1649 (★★★★★ NEW) find.pcworld.com/45620	2.8-GHz Pentium 4 520 120GB drive space - DVO-ROM/CO-RW combo drive	17-inch AG Neovo LCD monitor 128MB NVidia GeForce PCX 5750 graphics - AOpen SoundSphere 2.1 speakers	- WorldBench 5 score: 83 - Graphics: Very Good - Design: Very Good	Shoobox system with excellent design will look terrific in any setting; see-through speakers match well.
5	Medion M3Director 5100 \$1599 (★★★★★ Jan 05) find.pcworld.com/45250	3-GHz Pentium 4 530 200GB drive space - DVD±RW, OVO-ROM drives	19-inch Medion LCO monitor 128MB NVidia GeForce FX 5300 graphics - Medion Flat Speakers 2018	- WorldBench 5 score: 80 - Graphics: Good - Design: Outstanding	This nicely equipped, bargain-priced Media Center entertainment system is sold through Costco and Best Buy.
6	CyberPower Gamer Ultra 7500 Elite \$999 (★★★★★ NEW) find.pcworld.com/45622	2.2-GHz Athlon 64 3200+ 120GB drive space - DVD±RW drive	17-inch AOpen LCD monitor 256MB NVidia GeForce FX 5700LE graphics - Creative SBS 5.1 560 speakers	- WorldBench 5 score: 91 - Graphics: Very Good - Design: Very Good	Funky-looking system includes top-mounted USB and audio ports and pop-up status panel.
7	Alienware Bot \$1469 (★★★★★ Dec 04) find.pcworld.com/44204	3-GHz Pentium 4 530 120GB drive space - DVO±RW drive	17-inch NEC LCO monitor - Integrated Intel 915G graphics - Logitech Z-640 speakers	- WorldBench 5 score: 83 - Graphics: Very Good - Design: Good	Compact business PC has tool-less servicing and case lock, but room for future expansion is especially limited.
8	Polywell Mini-Box 900VX-3000 \$1250 (★★★★★ Oct 04) find.pcworld.com/43540	2-GHz Athlon 64 3000+ 160GB drive space (RAIO) - OVO±RW drive	19-inch AOC CRT monitor 128MB ChainTech SA5900X graphics - AOpen MS805-8 speakers	- WorldBench 5 score: 93 - Graphics: Outstanding - Design: Good	Shoobox system is quick and attractively configured for its size; expansion options are extremely limited.

FOOTNOTES: ¹ Features listings are not exhaustive; hard drive capacity may represent multiple drives. ² Use Dell Value Code 6V411-840REV to get this price. ³ Use Dell Value Code 6V411-470REV to get this price. **CHART NOTES:** Street price as of 11/19/04. Go to find.pcworld.com/39209 for a breakdown of the weightings we give to the factors contributing to a desktop PC's overall rating in each category. Price is taken into consideration only in determining Best Buy honors. All tests designed and conducted by the PC World Test Center. All rights reserved.

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Information source:
Virus Bulletin 6/2002 through 6/2004

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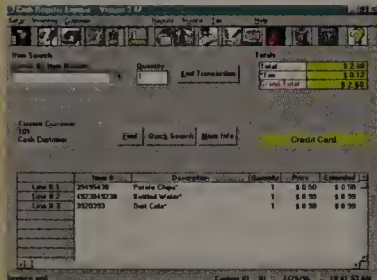
★ Products in this chart are ranked by star rating. Visit find.pcworld.com/45110 for reviews of all products tested this month and ranked in this chart.

DESKTOP REPLACEMENT		Features and specifications ¹		Performance	Bottom line
1	HP Pavilion Dv1000 \$1933 (★★★★★ Jan 05) find.pcworld.com/44952	• 1.5-GHz Pentium M 715 • 14-inch wide-screen • 6.4 pounds	• Fixed OVO-ROM and CD-RW combo drive • 802.11g, six-in-one media card reader, docking station, wireless keyboard/mouse	• WorldBench 5 score: 64 • Overall design: Very Good • Tested battery life: 4:02	A docking station and great speakers make this well-designed notebook good for playing multimedia.
2	Dell Inspiron 8600 \$2480 (★★★★ Nov 04) find.pcworld.com/44058	• 2-GHz Pentium M 755 • 15.4-inch wide-screen • 8.3 pounds	• OVO+RW drive • 802.11g, Corel WordPerfect Productivity Pack	• WorldBench 5 score: 90 • Overall design: Very Good • Tested battery life: 4:32	Convenient design touches and good sound make up for this speedy laptop's thick case.
3	HP Compaq Business Nc6000 Best Buy \$1874 (★★★★★ May 04) find.pcworld.com/41093	• 1.6-GHz Pentium M 725 • 14.1-inch screen • 6.6 pounds	• OVD-ROM and CD-RW combo drive • Touchpad and eraserhead pointing devices • 802.11a/g, Bluetooth, gigabit ethernet	• WorldBench 5 score: 74 • Overall design: Very Good • Tested battery life: 6:23	Lightweight corporate notebook comes with dual wireless capabilities and has longest battery life here.
4	Dell Latitude D600 \$2125 (★★★★ Jan 05) find.pcworld.com/44960	• 2-GHz Pentium M 755 • 14.1-inch screen • 6.4 pounds	• DVD+RW drive • Touchpad and eraserhead pointing devices • 802.11g, Bluetooth, gigabit ethernet	• WorldBench 5 score: 81 • Overall design: Very Good • Tested battery life: 4:02	Fast and light, this full-featured notebook offers a multipurpose bay and dual pointing devices.
5	IBM ThinkPad T42 \$1879 (★★★★★ NEW) find.pcworld.com/45860	• 1.8-GHz Pentium M 745 • 14.1-inch screen • 6.3 pounds	• OVO-ROM and CO-RW combo drive • Touchpad and eraserhead pointing devices • 802.11g, fingerprint scanner	• WorldBench 5 score: 77 • Overall design: Good • Tested battery life: 5:34	Slide fingerprint reader is a bit finicky, but this laptop has an industry-leading animated electronic manual.
ALL-PURPOSE NOTEBOOK					
1	Acer TravelMate 8000 \$2499 (★★★★★ Sept 04) find.pcworld.com/43074	• 2-GHz Pentium M 755 • 15-inch screen • 7.6 pounds	• OVO±RW/-RAM drive • 802.11g, Bluetooth, gigabit ethernet, four-in-one media card reader	• WorldBench 5 score: 89 • Overall design: Very Good • Tested battery life: 4:38	This business laptop boasts elegant design, moderate weight, and a flexible OVO burner.
2	IBM ThinkPad R51 Best Buy \$1699 (★★★★★ Sept 04) find.pcworld.com/43118	• 1.5-GHz Pentium M 715 • 15-inch wide-screen • 7.4 pounds	• OVO-ROM and CO-RW drive • Touchpad and eraserhead pointing devices • 802.11g, gigabit ethernet	• WorldBench 5 score: 67 • Overall design: Outstanding • Tested battery life: 3:54	The slim R51 suits users who don't require many bells and whistles. Excellent keyboard.
3	Polywell PolyNote 3015AW \$2499 (★★★★★ Nov 04) find.pcworld.com/44062	• 2-GHz Pentium M 755 • 15.4-inch wide-screen • 7.6 pounds	• OVO+RW drive • 802.11g, gigabit ethernet, four-in-one media card reader	• WorldBench 5 score: 98 • Overall design: Very Good • Tested battery life: 3:03	This fast laptop has a firm keyboard, a swappable OVD burner, and audio buttons.
4	MPC TransPort T2200 \$2002 (★★★★★ Oct 04) find.pcworld.com/43356	• 1.7-GHz Pentium M 735 • 14.1-inch screen • 6.9 pounds	• OVO-ROM and CO-RW combo drive • 802.11g, three-in-one media card reader, fingerprint scanner	• WorldBench 5 score: 79 • Overall design: Good • Tested battery life: 3:50	This handsome notebook offers the extra security of a fingerprint reader but has hard-to-hit mouse buttons.
5	Gateway M320XL \$1349 (★★★★ Dec 04) find.pcworld.com/44254	• 1.7-GHz Pentium M 735 • 15-inch screen • 6.5 pounds	• OVO±RW drive • 802.11g, four-in-one media card reader, Microsoft Works 7	• WorldBench 5 score: 76 • Overall design: Good • Tested battery life: 2:25	Lightweight but loaded with an 80GB hard drive, the stylish M320XL is an uncomplicated road machine.
6	Fujitsu LifeBook S7010 \$1919 (★★★★★ Oct 04) find.pcworld.com/43354	• 1.7-GHz Pentium M 735 • 14.1-inch wide-screen • 5.1 pounds	• DVD-ROM and CD-RW combo drive • 802.11g, Bluetooth, gigabit ethernet	• WorldBench 5 score: 75 • Overall design: Good • Tested battery life: 3:51	The light S7010 is a good choice for business travelers, but its hard drive is not user-upgradable.
ULTRAPORTABLE					
1	Dell Latitude X300 \$2364 ² (★★★★ Dec 04) find.pcworld.com/44250	• 1.4-GHz Pentium M LV 738 • 12.1-inch screen • 4.0 pounds	• External OVO+RW drive • 802.11g, gigabit ethernet, SD Card slot, docking station	• WorldBench 5 score: 73 • Overall design: Very Good • Tested battery life: 2:31	This relatively fast Latitude is expandable, thanks to the best docking station we've seen in this class.
2	Fujitsu LifeBook P7010D \$2149 (★★★★★ Dec 04) find.pcworld.com/44260	• 1.1-GHz Pentium M ULV 713 • 10.6-inch screen • 4.1 pounds	• DVO-ROM and CO-RW combo drive • 802.11a/g, four-in-one media card reader, fingerprint scanner, Microsoft Works 7	• WorldBench 5 score: 58 • Overall design: Very Good • Tested battery life: 5:15	Light unit with a fingerprint reader lasts ages on a battery charge and has extra card slots.
3	Dell Inspiron 700m Best Buy \$1916 (★★★★ Dec 04) find.pcworld.com/44246	• 1.8-GHz Pentium M 745 • 12.1-inch wide-screen • 4.8 pounds	• OVO+RW drive • 802.11g, SD Card slot, Corel WordPerfect Productivity Pack	• WorldBench 5 score: 80 • Overall design: Good • Tested battery life: 2:45	This strongly built, lightweight laptop offers a wide-aspect screen but has a cramped keyboard.
4	IBM ThinkPad X40 \$2299 ² (★★★★★ Sept 04) find.pcworld.com/43066	• 1.2-GHz LV Pentium M • 12.1-inch screen • 5.6 pounds	• External OVO-ROM and CO-RW combo drive • 802.11g, Bluetooth, gigabit ethernet, SD Card slot, docking station	• WorldBench 5 score: 55 • Overall design: Good • Tested battery life: 2:36	Ultraportable ThinkPad boasts the finest keyboard for its size. Optical drive is USB- or dock-based.

FOOTNOTES: ¹ Features listings are not exhaustive. ² Price includes extra-cost docking station. **CHART NOTES:** Street price as of 11/15/04. Weight includes AC adapter, power cord, and optical drive. Optical drives are removable unless otherwise noted. All tests designed and conducted by the PC World Test Center. All rights reserved.

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TOP 10 DIGITAL CAMERAS

★ Products in this chart are ranked by star rating. Visit find.pcworld.com/45822 for reviews of all products tested this month and ranked in this chart.

ON OUR FIRST *Top 10 Digital Cameras* chart that ranks advanced cameras strictly on design, features, and performance, the Canon EOS 20D earns a place in the sun. (Price now figures into Best Buy calculations only.) One of two interchangeable-lens models on the chart, the 20D boasts a through-the-lens viewfinder that's a delight to use.

The best of the four new cameras tested this month is the Nikon Coolpix 8800, which produced beautiful photographs—especially of still-life images—and has built-in vibration reduction. Its near-twin in image quality and controls, the Nikon Coolpix 8400, is ideal for wide-angle shots.



NIKON'S Coolpix 8800 makes its debut.

Straddling the line between advanced and point-and-shoot cameras, the Olympus C-7000 Zoom merges a compact design with a catalog of controls to please serious photographers. It lacks an external flash shoe and a mount for acces-

sory lenses, however—two features that all other cameras on this advanced chart have. Still, the C-7000 Zoom rates as one of the top cameras we've seen for image quality; its impressive showing and low price help win it Best Buy honors.

Though we found the dark images from Sony's Cyber-shot DSC-V3 unappealing, its easy learning curve and light weight earn it a spot on the chart.

	ADVANCED CAMERA	Features and specifications ¹	Performance	Bottom line
1	Canon EOS 20D \$1499 ² (★★★★★ Dec 04) find.pcworld.com/44874	• 8.2 megapixels • Interchangeable lenses • Through-the-lens optical viewfinder	• Aperture varies with lens • 1/8000 max shutter speed • 26.7 ounces (body only)	Image quality: Very Good Ease of use: Very Good Battery life: Outstanding This fast, rugged, powerful SLR will attract pros and advanced amateurs alike; the extensive controls are well designed.
2	Canon PowerShot G6 Best Buy \$699 (★★★★★ Dec 04) find.pcworld.com/44872	• 7.1 megapixels • 35mm to 140mm zoom • Optical viewfinder	• f2 to f8 aperture range • 1/2000 max shutter speed • 21.7 ounces	Image quality: Outstanding Ease of use: Outstanding Battery life: Outstanding A worthy successor to the G5, the latest in the G series has a better viewfinder and ups the resolution by 2 megapixels.
3	Olympus C-8080 Wide Zoom \$900 (★★★★★ June 04) find.pcworld.com/41860	• 8.0 megapixels • 28mm to 140mm zoom • Electronic viewfinder	• f2.4 to f8 aperture range • 1/4000 max shutter speed • 25.6 ounces	Image quality: Outstanding Ease of use: Very Good Battery life: Outstanding This powerful, easy-to-use model offers a wider-than-average focal range, but its optical zoom is shorter than average, and the camera is bulky.
4	Olympus C-5060 Wide Zoom \$600 (★★★★★ Feb 04) find.pcworld.com/39527	• 5.1 megapixels • 27mm to 110mm zoom • Optical viewfinder	• f2.8 to f8 aperture range • 1/2000 max shutter speed • 17.9 ounces	Image quality: Very Good Ease of use: Very Good Battery life: Outstanding The C-5060 falls behind in the megapixel race, but still provides one of the best and most intuitive collections of advanced controls.
5	Nikon Coolpix 8800 \$1000 (★★★★★ NEW) find.pcworld.com/45732	• 8.0 megapixels • 35mm to 350mm zoom • Electronic viewfinder	• f2.8 to f7.4 aperture range • 1/3000 max shutter speed • 23.7 ounces	Image quality: Outstanding Ease of use: Good Battery life: Good The bulkier of the Nikon twins (the 8400 is the other), this model includes built-in vibration reduction with its impressive 10X zoom.
6	Nikon Coolpix 8400 \$900 (★★★★★ NEW) find.pcworld.com/45734	• 8.0 megapixels • 24mm to 85mm zoom • Electronic viewfinder	• f2.6 to f7.7 aperture range • 1/3000 max shutter speed • 16.6 ounces	Image quality: Outstanding Ease of use: Good Battery life: Very Good This relatively compact unit has the widest-angle standard lens of any camera on the chart. Its controls are nearly identical to the 8800's.
7	Canon PowerShot Pro1 \$799 (★★★★★ Sept 04) find.pcworld.com/43164	• 8.0 megapixels • 28mm to 200mm zoom • Electronic viewfinder	• f2.4 to f8 aperture range • 1/4000 max shutter speed • 22.9 ounces	Image quality: Outstanding Ease of use: Good Battery life: Very Good With a barrel ring that controls both zoom and manual focus, this model has an SLR-like feel; it's surprisingly compact for a 7X zoom camera, too.
8	Nikon D70 \$1000 ² (★★★★★ Dec 04) find.pcworld.com/44876	• 6.1 megapixels • Interchangeable lenses • Through-the-lens optical viewfinder	• Aperture varies with lens • 1/8000 max shutter speed • 23.7 ounces (body only)	Image quality: Fair Ease of use: Good Battery life: Outstanding The D70 failed to shine in our full-automatic exposure tests. However, it offers interchangeable lenses and a full set of digital SLR features.
9	Olympus C-7000 Zoom Best Buy \$600 (★★★★★ NEW) find.pcworld.com/45736	• 7.1 megapixels • 38mm to 190mm zoom • Optical viewfinder	• f2.8 to f8 aperture range • 1/2000 max shutter speed • 7.1 ounces	Image quality: Outstanding Ease of use: Good Battery life: Good This lightweight, metal-bodied model lacks optional lenses, but it has a complete set of controls and a large, 2-inch LCD.
10	Sony Cyber-shot DSC-V3 \$700 (★★★★★ NEW) find.pcworld.com/45738	• 7.2 megapixels • 34mm to 136mm zoom • Optical viewfinder	• f2.8 to f8 aperture range • 1/1000 max shutter speed • 15 ounces	Image quality: Good Ease of use: Very Good Battery life: Very Good Though light and easy to use, this model was hampered by subpar color and dark exposures in our full-automatic exposure tests.

FOOTNOTES: ¹Resolutions are expressed in effective pixels, zoom range (focal length) is identified as 35mm equivalent, and camera weights include batteries. ²Price for this camera covers the body only; interchangeable lenses cost extra. Camera is also available as a kit, including a zoom lens. **HOW WE TEST:** To gauge picture quality, we take a series of shots, with and without flash, at the camera's highest resolution and default automatic settings. We photograph a complex still life and a mannequin to see how well each camera captures details and subtle colorings such as skin tones. A panel of judges reviews the on-screen and printed photos and assigns image-quality scores; we then average those scores. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Prices given are street prices as of 11/19/04. Star ratings are based on picture quality, ease of use, features, battery life, and support. Price is taken into consideration for Best Buy honors only. See find.pcworld.com/10860 for details on PC World's Star Ratings.

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TOP 10 PRINTERS

★ Products in this chart are ranked by star rating. Visit find.pcworld.com/46152 for reviews of all products tested this month and ranked in this chart.

THIS MONTH'S CHART consists entirely of a crop of newly tested color lasers. We divided the printers into two price-related categories: small-office (\$1000 or less) and corporate (above \$1000). At the low extreme is Dell's 3000cn, our small-office Best Buy, priced at an amazing \$449; at the other end is Xerox's \$3899 Phaser 7300N, the corporate model that earned the highest star rating.

The two Dell models we tested were excellent small-office performers. The 3000cn captured our Best Buy award thanks to its affordable price and great-looking text. The \$999 5100cn took the top spot in our rankings, however, due to its speed, better paper-

handling options, and support for Windows, Mac, and Linux.

In the corporate category, we were impressed with the Xerox Phaser 7300N's speed, excellent text, and detailed graphics, but its hefty price reserves it for offices with healthy IT budgets. Our Best Buy in this group is Lexmark's C762n, whose print quality rivaled that of the Xerox.

Three printers we looked at did not enter our Top 10: Lexmark's C510n, a \$999 model that fell down on print quality; the Xerox Phaser 8400N, a \$1299 printer that underwhelmed us on both speed and print quality; and the Okidata C5400N, a \$1099 unit that was too slow to make the cut.



DELL'S 3000cn offers terrific text.

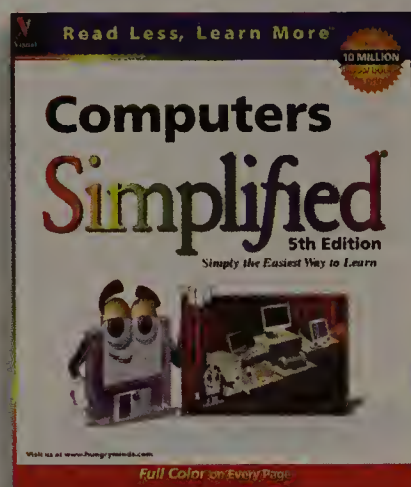
	SMALL-OFFICE	Features and specifications	Performance	Bottom line
1	Dell 5100cn \$999 (★★★★☆) find.pcworld.com/45960	- Rated 35 ppm black, 25 ppm color 600-by-600-dpi maximum true color resolution - Paper sizes up to legal 650 sheets input; 2 trays standard, 5 trays maximum	Text quality: Good Color graphics quality: Good Speed: 21.1 ppm text, 6.1 ppm graphics	This workhorse has a built-in duplexer and can expand with optional high-capacity paper trays. Print quality could be better.
2	Dell 3000cn Best Buy \$449 (★★★★) find.pcworld.com/45974	- Rated 25 ppm black, 5 ppm color 600-by-600-dpi maximum true color resolution - Paper sizes up to legal 150 sheets input; 1 tray standard, 3 trays maximum	Text quality: Outstanding Color graphics quality: Good Speed: 17.9 ppm text, 3.4 ppm graphics	Printer delivered excellent-quality text and solid graphics printing in a small footprint—and at a bargain price, too.
3	HP LaserJet 3550n \$999 (★★★☆☆) find.pcworld.com/45964	- Rated 16 ppm black, 16 ppm color 600-by-600-dpi maximum true color resolution - Paper sizes up to legal 350 sheets input; 2 trays standard, 3 trays maximum	Text quality: Very Good Color graphics quality: Fair Speed: 10.5 ppm text, 3.9 ppm graphics	Bulky model relies on an external print server for networking, but produced sharp text and line art.
4	HP LaserJet 2550L \$499 (★★★☆☆) find.pcworld.com/45962	- Rated 20 ppm black, 4 ppm color 600-by-600-dpi maximum true color resolution - Paper sizes up to legal 125 sheets input; 1 tray standard, 3 trays maximum	Text quality: Fair Color graphics quality: Good Speed: 8.6 ppm text, 1.1 ppm graphics	This very compact model lacks integrated networking and compromises on paper handling. Print quality was moderate.
5	Konica Minolta MagiColor 5430L \$999 (★★★☆☆) find.pcworld.com/45978	- Rated 21 ppm black, 21 ppm color 600-by-600-dpi maximum true color resolution - Paper sizes up to legal 250 sheets input; 1 tray standard, 3 trays maximum	Text quality: Very Good Color graphics quality: Fair Speed: 3.0 ppm text, 2.4 ppm graphics	An average product all around, this unit came in last in our performance tests. It has good paper-handling features, though.
6	Brother HL-2700CN \$599 (★★★☆☆) find.pcworld.com/45958	- Rated 31 ppm black, 8 ppm color 600-by-600-dpi maximum true color resolution - Paper sizes up to legal 250 sheets input; 1 tray standard, 1 tray maximum	Text quality: Fair Color graphics quality: Poor Speed: 18.7 ppm text, 3.1 ppm graphics	We saw acceptable line art, but fuzzy text and overly dark graphics, from this compact color printer. Text printing was fast.
	CORPORATE			
1	Xerox Phaser 7300N \$3899 (★★★★★) find.pcworld.com/45976	- Rated 37 ppm black, 30 ppm color 600-by-600-dpi maximum true color resolution - Paper sizes up to banner 650 sheets input; 2 trays standard, 6 trays maximum	Text quality: Outstanding Color graphics quality: Good Speed: 24.5 ppm text, 5.5 ppm graphics	The priciest printer here was the fastest at text and near the top of the heap for graphics printing. Has a built-in print server.
2	HP Color LaserJet 5550n \$3549 (★★★★) find.pcworld.com/45968	- Rated 27 ppm black, 27 ppm color 600-by-600-dpi maximum true color resolution - Paper sizes up to tabloid 600 sheets input; 2 trays standard, 5 trays maximum	Text quality: Outstanding Color graphics quality: Very Good Speed: 16.5 ppm text, 5.6 ppm graphics	This fast graphics printer issued good-looking output almost across the board, but printed text at only an average speed.
3	Lexmark C762n Best Buy \$1869 (★★★★☆) find.pcworld.com/45982	- Rated 25 ppm black, 25 ppm color 1200-by-1200-dpi maximum true color resolution - Paper sizes up to banner 600 sheets input; 1 tray standard, 3 trays maximum	Text quality: Outstanding Color graphics quality: Good Speed: 16.1 ppm text, 4.9 ppm graphics	Lexmark offers wired and wireless print servers for this model, which generated sharp, dark text but garishly colored images.
4	Okidata C7350n \$1984 (★★★★) find.pcworld.com/45980	- Rated 26 ppm black, 24 ppm color 1200-by-600-dpi maximum true color resolution - Paper sizes up to banner 630 sheets input; 2 trays standard, 4 trays maximum	Text quality: Outstanding Color graphics quality: Very Good Speed: 20.4 ppm text, 2.4 ppm graphics	With its fairly compact size and fast text printing, this unit is a good choice for a workgroup that prints mostly documents.

HOW WE TEST: We run time tests for text, line-art, and color and gray-scale photo samples (at normal quality settings on plain paper); then a panel of judges rates image quality. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Prices given are street prices as of 11/18/04. All street prices are for a standard printer configuration, including a network interface for the printer (unless otherwise noted). Price is taken into consideration for Best Buy honors only. Star ratings are based on print quality, features, ease of use, speed, and service and support. See find.pcworld.com/10860 for details on PC World's Star Ratings.

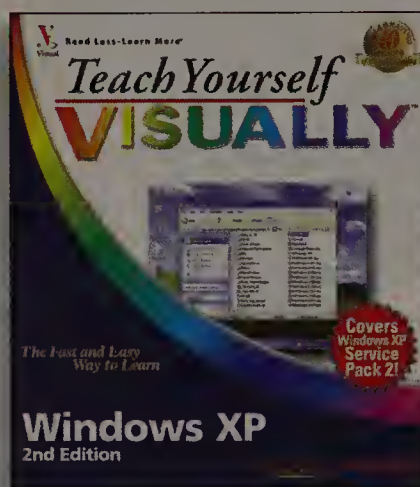


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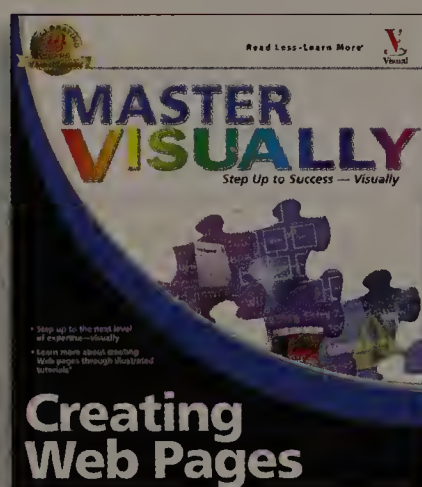
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MORE REVIEWS

MISSED AN ISSUE OF *PC World* or passed your copy along to a friend? Here's a recap of *Top 100* topics from previous issues. To read reviews of the products listed in these charts, go online and type in the *PC World* Find-It URL at the top of

each chart. Charts from the January 2005 issue use our new star-based rankings. The December 2004 chart uses our older, value-based system. Next month in the *Top 100*, we'll take a look at scanners and 17-inch LCD monitors.



VIEWSONIC'S VP912b achieved top scores in both our text and graphics tests.



THE 3.7-INCH SCREEN on Asus's MyPal A730 displays sharp text and vivid colors.



MEMOREX'S 16x Dual Format Double Layer Internal DVD Recorder is fast.

19-INCH LCD MONITORS		PDAs		DVD REWRITABLE DRIVES	
find.pcworld.com/45248		find.pcworld.com/44778		find.pcworld.com/45334	
1	ViewSonic VP912b Best BUY (★★★★★ Jan 05) find.pcworld.com/44986	1	Dell Axim X30 Best BUY (★★★★★ Aug 04) find.pcworld.com/42862	1	Memorex 16x Dual Format Double Layer Internal DVD Recorder (★★★★★ Dec 04) find.pcworld.com/44911
2	Eizo Nanao FlexScan L768 (★★★★★ Jan 05) find.pcworld.com/45206	2	Asus MyPal A716 (★★★★★ July 04) find.pcworld.com/42194	2	Lite-On SOHW-1633S Best BUY (★★★★★ Dec 04) find.pcworld.com/44908
3	Dell UltraSharp 1905fp Best BUY (★★★★★ Jan 05) find.pcworld.com/45204	3	Asus MyPal A730 (★★★★★ Dec 04) find.pcworld.com/44440	3	NEC ND-3500A Best BUY (★★★★★ Jan 05) find.pcworld.com/45530
4	Samsung SyncMaster 193P (★★★★★ Jan 05) find.pcworld.com/42444	4	HP iPaq RZ1715 Mobile Media Companion (★★★★★ Dec 04) find.pcworld.com/44442	4	Sony DRU-710A (★★★★★ Dec 04) find.pcworld.com/44912
5	Philips Brilliance 190P5EB (★★★★★ Jan 05) find.pcworld.com/42438	5	HP iPaq Hx4705 (★★★★★ Dec 04) find.pcworld.com/44636	5	LG Electronics Super-Multi GSA-4160B (★★★★★ Jan 05) find.pcworld.com/45384
6	LG Electronics Flatron L1930B (★★★★★ Jan 05) find.pcworld.com/44980	1	PalmOne Zire 72 Best BUY (★★★★★ July 04) find.pcworld.com/42246	6	BenQ DW1620 (★★★★★ Dec 04) find.pcworld.com/44906
7	LaCie Photon19vision (★★★★★ Jan 05) find.pcworld.com/44978	2	PalmOne Tungsten T3 (★★★★★ Nov 03) find.pcworld.com/38027	7	Pioneer DVR-A08XLA (★★★★★ Jan 05) find.pcworld.com/45364
8	Sharp LL-191A (★★★★★ Jan 05) find.pcworld.com/44984	3	PalmOne Tungsten C (★★★★★ Sept 03) find.pcworld.com/36887	8	TDK Internal IndiDVD 12x+/8x-Multiformat Burner (★★★★★ Oct 04) find.pcworld.com/43812
9	AG Neovo X-19AV (★★★★★ Jan 05) find.pcworld.com/44970	4	PalmOne Tungsten E (★★★★★ July 04) find.pcworld.com/38030	9	Pacific Digital Mach-16 (★★★★★ Jan 05) find.pcworld.com/45532
10	HP F1903 (★★★★★ Jan 05) find.pcworld.com/44974	5	Garmin iQue 3200 (★★★★★ Dec 04) find.pcworld.com/44438	10	Teac DVW58G (★★★★★ Aug 04) find.pcworld.com/42876
From the January 2005 Issue		From the December 2004 Issue		From the January 2005 Issue	

HERE'S HOW

EDITED BY REBECCA FREED AND DENNIS O'REILLY



WINDOWS TIPS

SCOTT DUNN

Freeware Fills In Where Windows Comes Up Short

ALL Versions

WE ALL KNOW that Windows is far from perfect—and developers may know that best of all. Thankfully, they also have the tools to fix those imperfections and share their ingenuity with us. When we're really lucky, the developers give their software away for free, though some creators do ask for donations. If there's a gap or two in your computing tool kit, one of these fabulous freebies might fill it. Visit find.pcworld.com/45002 for the downloads.

Backing up ain't hard to do: There are many backup programs, but few as elegant and powerful as SyncBack from 2BrightSparks (find.pcworld.com/45090). As its name suggests, SyncBack has two primary functions: backing up and restoring data (copying in one direction), and synchronizing folders (copying in both directions to make the contents of two folders identical). You can set up profiles for com-

mon backup or synchronization chores and run them automatically with the program's scheduling feature (see **FIGURE 1**).

SyncBack works with network drives, FTP servers, and CD or DVD drives (as long as you preformat the disks using the Universal Disk Format, or UDF, which is a newer way to format CDs and DVDs). The program e-mails you its log file automatically when your backup is done. It also shuts down any applications you specify before beginning, and it can launch applications before or after it finishes. Unlike some backup programs (including the backup software built into some versions of Windows), SyncBack can compress files using the standard .zip format. This lets you easily find and retrieve a single file inside an archive without having to navigate through a backup program. SyncBack's elegant design offers easy and expert modes. The program is a snap to customize, too.

Folder shortcuts in a hurry: Readers often ask how to create shortcuts to folders that will make them open where and how the user wants. Though Windows provides this capability, creating the shortcuts in Windows may entail setting up messy command-line switches that are nearly impossible to remember. To solve the problem, either take a refresher course in the folder-shortcut tutorial that I provided in my April 2002 *Windows Tips* column

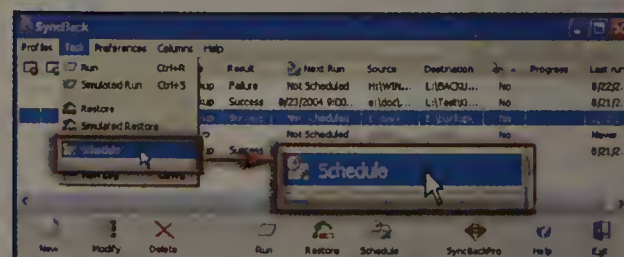


FIGURE 1: SET BACKUPS FOR ALL occasions and automate them using SyncBack's scheduling feature.

122 WINDOWS TIPS

The best Windows freebies: better backups, cleaner desktops, faster file access, and easier file renaming.

126 HARDWARE TIPS

Find the right type of connection for your peripherals; FireWire vs. USB 2.0; keep your laptop in your grasp.

130 INTERNET TIPS

Change your default browser from IE to Firefox, Mozilla, or Opera; unhide your Quick Launch browser shortcuts.

131 LINUX TIPS

Gnome 2.6's Nautilus file manager gives a new view of your folders; free software via Xandros Networks.

132 ANSWER LINE

How to tell if you are a victim of online identity theft; use the free Password Safe utility to manage your passwords and stay secure; add text of your choice to the taskbar.



126

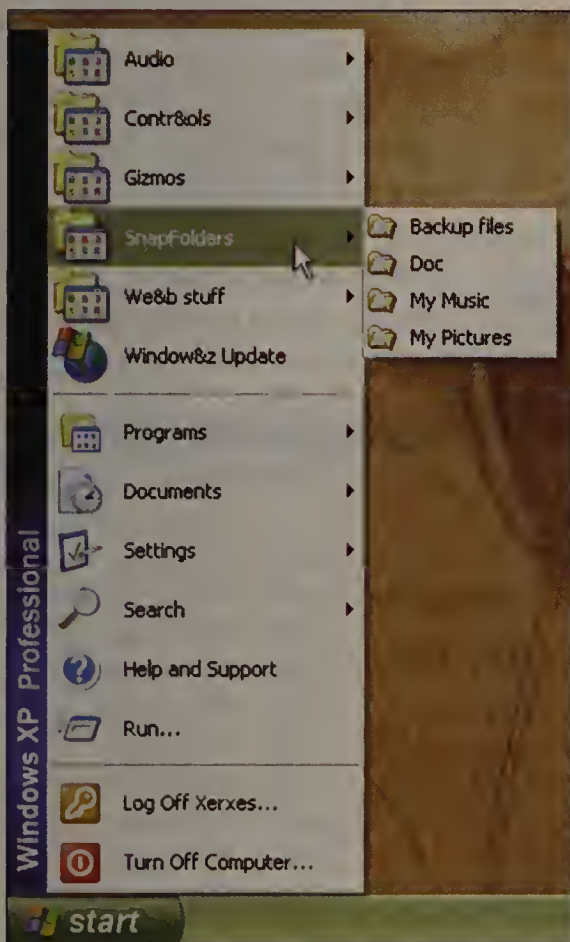


FIGURE 2: INSTANTLY CREATE shortcuts to your favorite folders with SnapFolders 2005.

(find.pcworld.com/45004), or install SnapFolders 2005 (find.pcworld.com/45092). Right-click any folder to create a shortcut via the context menu, or launch the utility from its own shortcut to see a dialog box where you can specify shortcut preferences. SnapFolders puts the shortcut on your Start menu or on a submenu (see **FIGURE 2**). The program doesn't offer every possible tweak that the command-line approach does, but it saves time and trouble.

Taskbar tweaker: Maybe you don't like having the taskbar hide your lovely desktop wallpaper. Or you need every inch of your desktop for icons and other doodads. One solution is to use the taskbar's Properties

dialog box to automatically hide the taskbar until your mouse moves over its original position. Unfortunately, this leaves an unsightly line along one edge of your screen—and on older systems, the action isn't exactly brisk. A couple of free-ware developers have found a cure for this pain. One is AKSoftware's Transbar (find.pcworld.com/45094), which lets you make the taskbar wholly or partially transparent in 1 percent increments (see **FIGURE 3**). Another is TaskbarHide (find.pcworld.com/45096), which instantly pops the taskbar on or off screen (minus the ugly line, thank you very much) whenever you move your mouse over or away from it.

Start from scratch: But what if you want to eliminate your taskbar altogether? GeoShell (find.pcworld.com/45098) is a free open-source taskbar replacement consisting of modular floating toolbars that you can group and rearrange to your heart's content. Your desktop will be cleaner because its icons go into a menu instead of cluttering your screen (see **FIGURE 4**). The menus can be more compact than a typical Windows desktop arrangement, though some clutter remains. Also, you may not like floating toolbars—

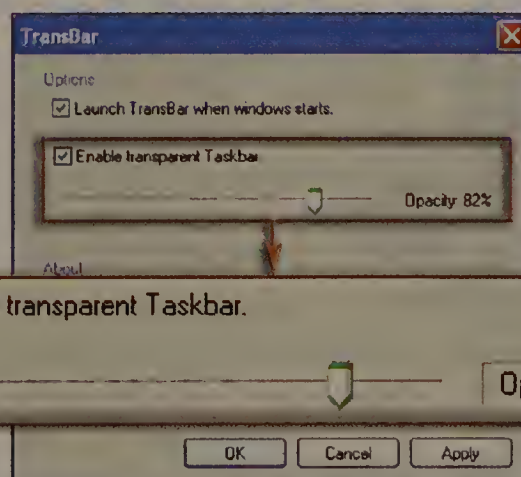


FIGURE 3: TASKBAR TOO UGLY? Let Transbar make your taskbar transparent.

personally, I prefer to anchor them to an edge of the desktop. GeoShell's skin feature gives you more control over your desktop's look and feel, and you can even download plug-ins to extend its features.



FIGURE 4: CLEAR OFF YOUR desktop by placing your icons on a drop-down menu.

Destroy duplicates: Does your hard disk have duplicate files? I'm not talking about backups, but rather, useless copies of the same file that you may have unknowingly downloaded or created multiple times. DoubleKiller (find.pcworld.com/45014) can help you find out. Despite some quirks in its interface (you need to start with the second tab before you can use the first one, for example), the program can search various drives for the file types you specify, hunting for files of the same name, size, date, and/or CRC32-checksums (a means of checking file contents; see **FIGURE 5**). After

completing the search, DoubleKiller gives you tools for launching, moving, or deleting the duplicate files it finds. And ►

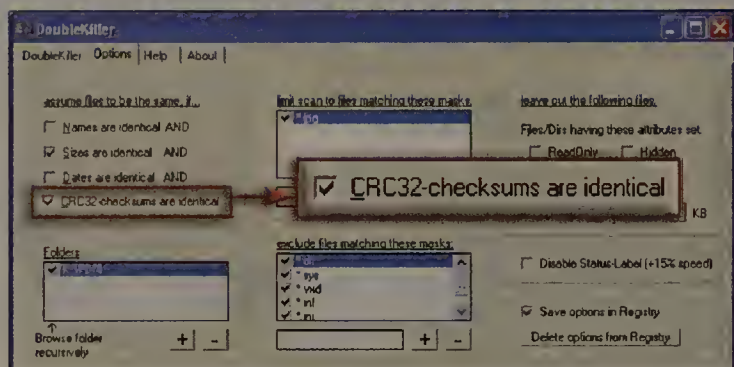


FIGURE 5: ARE DUPLICATE FILES wasting your valuable disk space? Find and delete them all with DoubleKiller.

the utility's Help tab provides a brief instruction manual to get you started.

Right-away renaming: You just dumped 10,000 photos from your digital camera onto your hard drive, including a pot-pourri of memories from birthdays, weddings, vacations, and your personal rubber-band collection. How will you ever keep them straight? Bulk Rename Utility (find.pcworld.com/45102) to the rescue! Launch BRU from its Start menu icon, or right-click the folder containing the files you want to rename. The utility's settings look a little complicated, but the numbered and highlighted sections indicate the order in which options (if any) will be applied. The result of this complexity is a great deal of power, not just for searching and replacing or for adding dates or numbers, but also for such features as appending the folder name or placing renamed copies in a folder of your choosing. BRU's Tip of the Day helps you learn features gradually. Like most good file utilities, BRU shows you a preview of your new file names to avoid unhappy surprises.

Super sorting: Now that you've renamed all your photos and other files, do you really want a bazillion of them to occupy the same folder? One way to organize a

large number of files is to create folders for each letter of the alphabet (that is, a folder named 'A', another named 'B', and so on), and move your files into those folders based on each file's name. Unfortunately, this process can be tedious. Luckily for you, File Sieve (find.pcworld.com/45104) will automate the work. The program creates 27 folders (one for each letter of the alphabet, plus '#' for files starting with numbers and symbols) in the location of your choice, and it copies or moves files into the alphabetically correct location.

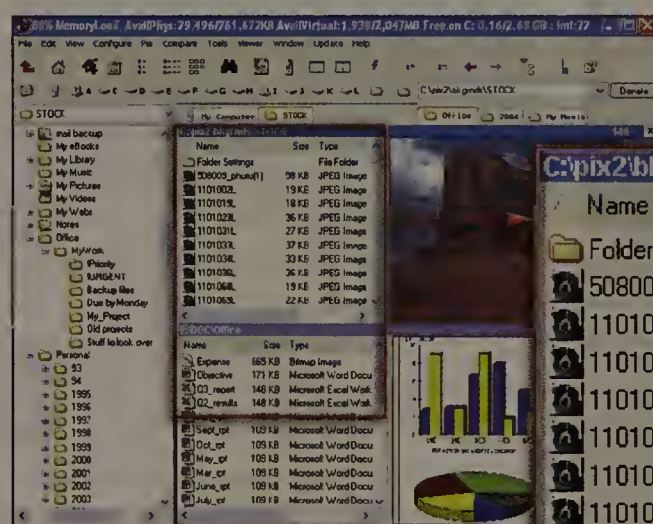


FIGURE 7: BRING BACK the golden days of dual-pane file windows with FileAnt.

Once you've created the folders, you can run File Sieve to move or copy additional files, without creating the folders anew (see **FIGURE 6**).

File-management muscle: Long ago a Windows program called File Manager showed multiple drives and folders in its parent window so we didn't have to keep switching between, and manually rearranging, multiple Explorer windows. FileAnt (find.pcworld.com/45290) takes us back to this golden age with a powerful yet nimble file-management tool that opens multiple folders at once (accessible via tabs) and displays two at a time via its tiling option (see **FIGURE 7**). The program has built-in viewers for previewing files without opening separate application windows, as

well as its own FTP client, a pie chart diagram that shows the size of folders, custom folder icons, and folder synchronization. It even has an MP3 player you can access from its tray-icon menu. Prettier file utilities are available, but few are as powerful as FileAnt. The app is styled "free donationware," meaning that donations are encouraged but not required.

Find that file: Looking for a needle of a file in a hard-drive haystack? Sometimes Windows' built-in search tool simply isn't up to the job. Fortunately, Mythicsoft has given us Agent Ransack (find.pcworld.com/45022), a free version of its File-Locator Pro file-search utility. Agent Ransack relies on the usual DOS wild cards or on more-robust regular expressions to search for your files. Don't know what a regular

expression is? Just click the *Search Wizard* button to have the program walk you through the steps for specifying the necessary parameters. For even more criteria, check the utility's *Expert User* option. Agent Ransack even saves your previous search criteria and your past search results, too. What's not to like? ■

Send Windows-related questions and tips to scott_dunn@pcworld.com. We pay \$50 for published items. Visit find.pcworld.com/31607 for more Windows Tips. Scott Dunn is a contributing editor for PC World.

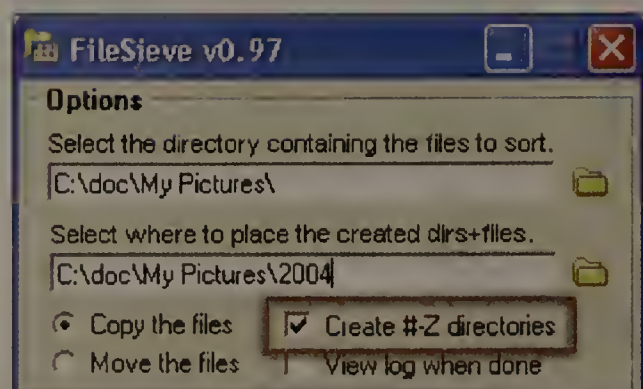


FIGURE 6: WHY WASTE TIME ORGANIZING your files manually? File Sieve puts them in alphabetical folders.



The Shuttle XPC is the ultimate entertainment hub, blending beautifully and seamlessly into any environment. Now available with Microsoft® Windows® XP Media Center Edition 2005, Shuttle XPC Media Center PCs offer incredible performance and features in a compact, finely crafted package.

simplify your Digital Lifestyle

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FREE

Processor upgrade to Pentium 4 3.4 GHz
Hard drive upgrade to 250GB Serial ATA
Graphics upgrade to GeForce 6600 256MB

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was \$2149

Specifications

Model	Shuttle XPC G5 8300mc
Processor	Intel® Pentium® 4 550 (3.4GHz) w/HyperThreading
Operating System	Microsoft® Windows® XP Media Center Edition 2005
Main memory	512MB Dual Channel DDR PC3200
Graphics	NVIDIA GeForce 6600 256MB PCI Express
Hard drive	250GB 7200RPM Serial ATA
Optical drive	16X Dual Layer DVD/RW
Media Reader	8-in-1 Card Reader
System Cooling	Integrated Cooling Engine (ICE) Liquid Cooling
Dimensions (L x W x H)	12.2 x 7.8 x 7.2 (in), 310 x 200 x 185 (mm)

* monitor not included



G5 8300mc



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YOUR LAPTOPGet the Right Connection
for All of Your Hardware

BLUETOOTH? FIREWIRE? USB? They're all different, but they all do the same thing: connect devices to your PC. Each of these technologies has pluses and minuses, as well as old and new versions (see the chart below). When you choose your next mouse, keyboard, or other peripheral, make sure that it has the right connection for your system, and your needs.

BLUETOOTH ON THE RISE

YOU CAN EXPECT to see more Bluetooth devices in stores and on Web sites in 2005—and not just keyboards, mice, and PDAs. A survey by market research company InStat/MDR found that people are considering Bluetooth stereo headphones for their desktop computers, notebooks,

MP3 players, PDAs, and mobile phones, among other consumer applications.

Think of Bluetooth as a wireless, low-bandwidth version of USB. Simply pop a tiny Bluetooth hub such as Belkin's Bluetooth USB Adapter (find.pcworld.com/45148; see **FIGURE 1**) into your PC's USB

port to connect up to seven devices wirelessly. But Bluetooth doesn't replace the Wi-Fi 802.11b or 802.11g standard: It moves data at only 1 mbps, while Wi-Fi is up to 50 times faster. Also, you can't use Bluetooth to connect to the Internet.

Wi-Fi and Bluetooth operate in the same 2.4-GHz frequency band. The two types of devices have been known to step on each other's signals, slowing down both. But I've run into noticeable slowdowns only when my wireless router was less than a foot away from my Bluetooth mouse and keyboard. (Cordless phones that run at 2.4 GHz, on the other hand, have slowed my Wi-Fi network to a crawl from across the room.)

The latest Bluetooth release, version 1.2, attempts to remedy this problem by using Adaptive Frequency Hopping (AFH) to continually direct and redirect the Bluetooth signal to unoccupied portions of the 2.4-GHz band. Bel-

kin (find.pcworld.com/45152) and Logitech (find.pcworld.com/45150) expect to have Bluetooth 1.2 products available by the time you read this. Bluetooth 1.2's AFH should reduce signal conflicts, but there's no guarantee. If you already have a Wi-Fi network in place, play it safe and check the return policy for any Bluetooth product before you buy it.

If you really want a wireless keyboard and mouse, but you also want to keep your existing Wi-Fi network, consider a mouse/keyboard combo that uses a 27-MHz radio-frequency connection. RF products don't have the range of Bluetooth, but they've been around for years, and I've found them very reliable. They cost less than their Bluetooth counterparts, too. Among the companies that sell RF keyboards and mice are stalwarts Logitech (find.pcworld.com/45154) and Microsoft (find.pcworld.com/45156).

FIREWIRE VERSUS USB 2.0

IF YOU NEED to move lots of data quickly, choose a device that uses a FireWire connection. Theoretically, USB 2.0 ►



FIGURE 1: ADDING A USB BLUETOOTH HUB such as Belkin's USB Adapter to your PC is a snap, literally.

Make the Hardware Connection

BE SURE YOU'RE USING THE most suitable bus to link external devices to your PC.

INTERFACE	Maximum data throughput (mbps)	Best for
Bluetooth 1.1 or 1.2	1	Wireless, low-bandwidth devices such as mice and keyboards. Its maximum range is about 33 feet.
USB 1.1	12	Low- to medium-bandwidth devices such as mice, keyboards, and personal printers.
Wi-Fi (802.11b/802.11g)	11/54	Standard wireless-networking tasks.
FireWire 400 (IEEE 1394)	400	High-bandwidth devices: workgroup printers, external hard drives, digital-video downloads.
USB 2.0/OTG	480	High-bandwidth devices: workgroup printers, external hard drives, digital-video downloads.
FireWire 800 (IEEE 1394b)	800	Digital video and other devices that move large amounts of data on and off internal and external hard drives.

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CISCO SYSTEMS



can run at up to 480 mbps, whereas FireWire 400 (also called IEEE 1394 or i.Link) tops out at 400 mbps. But in my experience with external hard drives—and in the experience of others—FireWire links are noticeably faster than USB 2.0 links.

Some external hard drives support both USB 2.0 and FireWire standards. Maxtor's OneTouch series (find.pcworld.com/45158) is one prominent example. But until recently only a handful of PCs came with FireWire capability built in, so you may need to add a FireWire adapter such as Adaptec's \$40 FireConnect 4300 (find.pcworld.com/45160). FireWire connections are increasingly available on new PCs, particularly high-end models. Except for bargain-basement units, most new notebooks also have FireWire 400 ports.

The first consumer devices equipped with USB On-The-Go ports are showing up on store shelves. USB OTG allows devices such as MP3 players, cell phones, and PDAs to communicate with each other even when not plugged into a PC. USB OTG uses less power and has smaller connectors than standard USB, but adapters will allow you to connect USB OTG-equipped devices through the existing USB ports on your PC.

To save every download second, get a hard drive and adapter that support the new FireWire 800 standard, aka IEEE 1394b. FireWire 800 reportedly doubles data throughput to 800 mbps. Early PC

World tests (find.pcworld.com/45162) using a single FireWire 800 hard drive revealed that the new connection is faster than both FireWire 400 and USB 2.0, though it's nowhere near twice the speed of a FireWire 400 drive. Few FireWire 800 products are on the market, but LaCie (www.lacie.com) offers hard drives and the adapter card needed to connect the drive to a PC.

UBIQUITOUS SERIAL BUS

THE UNIVERSAL SERIAL BUS is the PC connection of choice. Practically every computer supports it, and almost all peripherals use it. Here's what to consider before you buy:

How much speed will I need? USB moves data at low speed (up to 1.5 mbps), full speed (up to 12 mbps), or high speed (theoretically, up to 480 mbps). USB version 1.1 supports low and full speeds, while USB 2.0 adds high-speed capability. If you're eyeing a USB external drive or other high-bandwidth device, make sure your PC supports USB 2.0.

What USB version does my PC support? If your system was made in the last three years, it likely has USB 2.0 ports. But if you haven't updated your version of Windows XP or 2000, you may not have the proper USB 2.0 drivers. To find out which version of USB your PC uses, right-click *My Computer* and click *Hardware Device Manager* (in Windows XP and 2000), or right-click *My Computer* and click *Device Manager* (in Windows 98 and Me). Scroll to and double-click *Universal Serial Bus controllers*. Right-click one of the controllers listed and click *Properties*. If you see a listing for 'USB2.0' or 'Enhanced', you have USB 2.0 (see **FIGURE 2**). If not, update your version of Windows and add USB 2.0 drivers. For more information, visit find.pcworld.com/45164 to read Microsoft Knowledge Base Article 329632.

If you can't get your desktop system to support USB 2.0, add a USB 2.0 PCI adapter card instead. Keyspan's USB 2.0 Card (find.pcworld.com/45166) costs around \$30 and has drivers for Windows versions 98 and up. If your primary system is a notebook, you're almost certainly

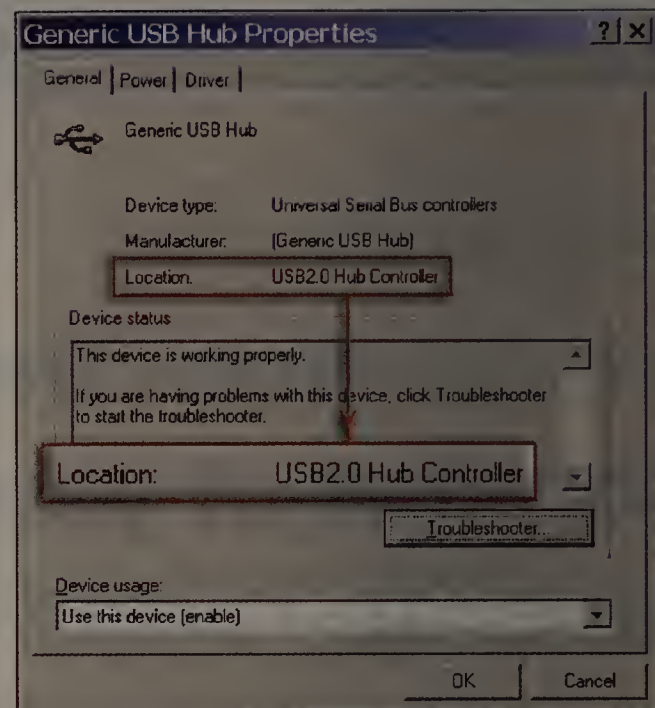


FIGURE 2: CHECK YOUR SYSTEM'S Device Manager listings for 'USB2.0' or 'Enhanced'.

stuck with its original USB interface until you trade it in for a newer machine.

Does my PC have sufficient power? If you already have several USB devices connected to your PC, you've probably discovered the joy of a USB hub. These devices expand a single powered USB port (not a nonpowered hub, like those found on some keyboards or monitors) into four or even eight separate USB ports.

Your USB hub may not provide enough power for all the devices connected to it, however. Printers, scanners, and many other USB devices provide their own power, but some are powered only via their USB connection. If the hub can't meet the devices' cumulative demand for power, the USB bus may shut down.

To avoid a USB brownout or blackout, use a self-powered hub. As its name implies, this type of hub plugs into a wall socket and draws its own electricity. The other type of USB hub, the bus-powered hub, offers only about one-fifth as much power. See my March 2002 *Hardware Tips* item, "For Fast, Easy Computing, USB Is the Bus to Ride" (find.pcworld.com/45358), for more on USB hubs. ■

Go to find.pcworld.com/31511 for past *Hardware Tips* columns. Send your tips and questions to kirk_steers@pcworld.com. We pay \$50 for published items. Kirk Steers is a PC World contributing editor.

GET A BETTER GRIP

DOES YOUR LAPTOP look great? Then watch out: That shiny notebook case is also a slippery case. Few events can end your laptop's life faster than a sudden drop onto a hard surface. If your notebook is slipperier than buttered soap (or if you suffer from old-fashioned fumble-fingers), there's an easy way to keep your system well in hand. Simply place a few strips of 3M's Safety-Walk nonslip tape—decoratively—on both sides of the notebook's case. The tape has a bumpy, grippable surface that resists sliding through clumsy fingers or sweaty palms. Safety-Walk tape is available at hardware stores for approximately \$10.



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INTERNET TIPS

SCOTT SPANBAUER

'We Have Now Returned Control of Your Browser'

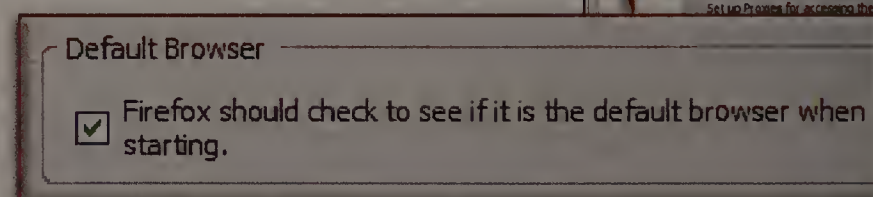
AS A KID in the 1960s, I remember many happy hours spent huddled in front of a big black-and-white TV set on cold winter afternoons, watching reruns of *The Outer Limits*. "We will control the horizontal; we will control the vertical," intoned the ominous voice-over during the opening credits (find.pcworld.com/45108). The effect was thrilling, and creepy.

Is it just me, or does using a Web browser—or even installing a different Web browser—sometimes feel just as creepy as watching that old TV show, as if powers from somewhere in the outer limits of the Internet were controlling your PC? Well, it doesn't have to be that way. Whether you use Internet Explorer, Firefox, Mozilla, Opera, or a combination of the four, you can remain firmly in charge of determining which browser Windows opens by default, and you can switch

quickly to a different one as your needs dictate. (For more about browser alternatives, see "The New Web Challengers" on page 64, or visit find.pcworld.com/45112 to read last October's *News and Trends* story "Is It Time to Ditch IE?")

CHOOSE YOUR DEFAULT

WINDOWS COMES with Internet Explorer set as the default Web browser. (No surprise there.) Whenever you click a hypertext transfer protocol (HTTP) link, whether it's in a document, an e-mail



message, or an instant message, Windows uses IE by default to load and display the linked Web page.

For security or for any number of other reasons, you may decide to install a different browser and make it the default. Depending on your system's configuration, however, installing a new browser may not automatically set it as the default. You can change your default browser in Windows XP (with Service Pack 2) to the latest version—as we went to press—of any of the four leading alternative browsers (visit find.pcworld.com/45114 for all four downloads) by following these steps:

Firefox 1.0 Preview Release: If you want to make this new browser your default, choose *Tools•Options*, select the *General* icon in the left panel, click the *Check Now* button in the *Default Browser* section, and choose *Yes* when Firefox asks whether you would like to make it the default browser

(see **FIGURE 1**). If you wish to be alerted anytime another browser attempts to set itself as the default, be sure to select *Firefox should check to see if it is the default browser when starting*, and click *OK*.

Internet Explorer 6: Choose *Tools•Internet Options*, select the *Programs* tab, click *Reset Web Settings*, uncheck *Also reset my home page* in the next dialog box (unless you want it to be someone else's choice), and click *Yes*. If you would like to set Internet Explorer to prompt you when another program has taken over as the default browser, check *Internet Explorer should check to see whether it is the default browser* at the bottom of the dialog box. Click *OK*.

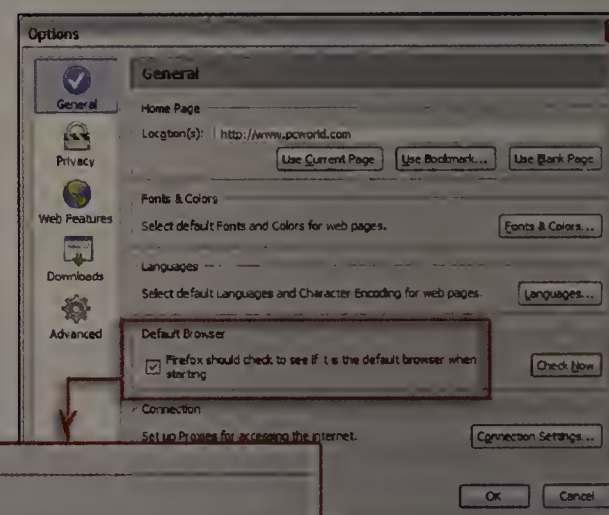


FIGURE 1:
TO GET MORE control over

your browsing, configure the Firefox Web browser so that it becomes your default.

Mozilla 1.7.3: Choose *Edit•Preferences*, select *Navigator* in the left panel, click *Set Default Browser*, and finish by clicking *OK*.

Opera 7.54: Choose *Tools•Preferences*, select *Default application* in the left panel, and then click *Select all* to make Opera the default application for handling all 16 of the Internet file types and protocols listed on the screen—or choose only those you want it to handle by default. Click *Check if Opera is default browser on startup* if you prefer a warning when another browser tries to take over. Click *OK*. ■

Send your questions and tips to nettips@spanbauer.com. We pay \$50 for published items. Go to find.pcworld.com/31523 for more Internet Tips. Scott Spanbauer is a contributing editor for PC World.

KEEP ALL YOUR BROWSER SHORTCUTS CLOSE AT HAND

INSTALLING ANOTHER Web browser—or three other Web browsers—doesn't remove or disable Internet Explorer or any other browser. To launch the browser of your choice, just click or double-click its icon in the Start menu, in the Quick Launch toolbar, or on the desktop. If you can't find a browser's icon, it may be hidden. To unhide browser icons, launch *Add or Remove Programs* in the Control Panel, click *Set Program Access and Defaults*, expand the program configuration currently in use (if necessary), make sure that *Enable access to this program* is checked in the box next to each of the programs you want to use, and click *OK*.

LINUX TIPS

MATTHEW NEWTON

A Folder View That Even a Gnome Would Love

IF YOU'RE USED TO Windows Explorer, the new version of Nautilus (the Gnome file manager) may throw you at first. Starting with Gnome 2.6, Nautilus behaves less like Windows Explorer and more like the Finder on pre-OS X Macs. Every folder opens in its own window, and each folder window "remembers" its shape, size, view settings, background, and scroll position. It's a love-it-or-hate-it method of operation—one that a lot of Windows converts and longtime Gnome users have decided they hate. If you prefer a browser-style file-manager window, select *Browse Filesystem* from the Gnome Applications menu. But don't give up on Nautilus's folders too quickly.

First, set the default view for the folders you access often. For instance, open the folder where you dump pictures from your digital camera, and select *View•View as Image Collection*. Now you can scroll

through thumbnails of all the images in that folder. Click any image to see a larger version with all of the metadata that your camera attached to it (usually date and time stamps, resolution, and exposure information; see **FIGURE 1**). The Edit menu provides commands for rotating or flipping an image; make changes permanent by clicking *File•Save*. The next time you open the folder, it snaps to this mode.

In other folders, try the Icon and the List modes in the View menu. Fiddle with the zoom—*View•Zoom In* and *View•Zoom Out*—to find the best layout. (When you zoom in on text documents, Nautilus fits their first few words onto the docs' icons.)

If you find yourself becoming buried in a sea of windows, learn the power of Gnome's double-middle-click function. A double-middle-click is when you double-click your mouse's middle button, or its scroll wheel if it lacks a third button.

Opening a folder with a double-middle-click pops the new window open while also closing the previous one. That isn't helpful if you want to drag a few files from one window to another (in that case, double-click as usual to open each window). But to drill down into nested folders, double-middle-click to keep unneeded windows from cluttering the screen.

What if you're four or five folder levels deep and you want to copy a file to a folder that's three levels up? In the lower left of every folder window, you will see a down-arrow next to

the folder's name. Click that to open a menu of parent folders. Select any of them to open its window (see **FIGURE 2**).

XANDROS FREEDOM

ANYONE MOVING from Windows to Linux will find Xandros Desktop a solid introduction to the operating system. The OS is easy to install and friendly toward new Linux converts. But Xandros Desktop comes with a smaller number of applications than do other Linux distributions. For instance, what if you're dying to run Gaim—a top-notch universal instant messaging client—only to find that it isn't included with Xandros?

You can pull additional Free Software down from the Debian project (www.debian.org) through the Xandros Networks package-management tool. Click *Launch•Xandros Net-*

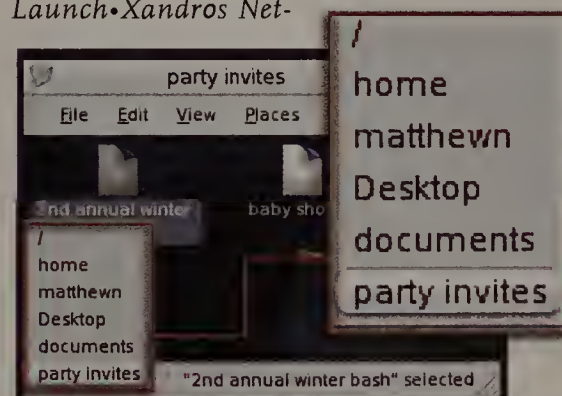


FIGURE 2: TO JUMP TO A PARENT FOLDER, click its name at the bottom of the window.

works, select *Edit•Set Application Sources*, click the box for 'Debian unsupported site', and click OK. Select *Settings•Expert View*.

You'll see many new application categories on the left. If you choose an application (such as Gaim) from the Debian collection, Xandros Networks will automatically install the necessary support files. But if the app you select requires upgrading half your system to Debian packages, you may end up with a mess—perhaps even a mess that won't boot. Nevertheless, Gaim and many other programs will install without a hitch. ■

Technical Project Manager Matthew Newton of PC World is a self-proclaimed writer-editor-tinkerer-artist-geek who writes the Free Agent column (find.pcworld.com/39809) about Free Software.



FIGURE 1: YOU CAN SEE MORE Information about your images in Gnome version 2.6's Nautilus file manager.

ANSWER LINE

LINCOLN SPECTOR

Has Someone Made Off With My Online Identity?

? WHEN I TRIED to log on to my Yahoo mail account, a message appeared stating that my password wasn't valid. The options for retrieving a forgotten password didn't work, either (my zip code was rejected). I also can't log on to my EBay account (where, coincidentally, I use the same user name and password).

Dane Matsushita, Renton, Washington
TRY THE SIMPLE solution first: Make sure your <Caps Lock> key isn't active. Most security-minded sites use case-sensitive passwords; if your <Caps Lock> is on, your password will be rejected.

If that doesn't solve the problem, you're almost certainly the victim of identity theft. What gives it away are the zip code

picious activity before real harm is done.

If a Web site's password stops working, and you know you didn't forget it, your first job is to visit any other sites where you use the same password. If you can still log on, change your password on those sites immediately. Next, contact credit-card companies whose account numbers you registered at the sites to which you can no longer log on, and cancel the accounts. Also let the companies know that you suspect you are the victim of identity theft.

At sites where your password no longer works, don't bother restoring a "forgotten" password. This usually creates a new password that's e-mailed to you. Since the culprits have almost certainly changed

your account's contact information, requesting the password will do nothing except send an alert that you're on to them.

Instead, search the site for a way to contact an actual person at the company—a phone number, an e-mail address for custom-

er service, or a Web-based form. Phone numbers are better—the response is quicker, and it's an emergency. Find someone associated with the site who can verify you are who you say you are and can fix the problem.

If there's no way to get in touch with such a person, let that account go and open another one—preferably with a firm that lets you contact a human being.

When it comes to identity theft, an ounce of prevention is worth much more than a pound of cure. So use a reliable

firewall, antivirus program, and spyware checker. Visit find.pcworld.com/45172 to learn more about PC security basics.

Avoid phishers' hooks. Delete e-mail that seems to come from your bank or another site you do business with and that asks you to send or update your personal info or to click a link to log on. Banks and e-commerce sites don't work this way.

Don't use passwords that are easy to break (you'd be surprised how simple it is for crackers to discover your kids' names). Use odd combinations of upper- and lowercase letters. Add numbers and symbols. Change your passwords regularly. And don't use the same password for more than one site. Visit find.pcworld.com/45174 to read Scott Spanbauer's October 2003 *Internet Tips* column, "Can You Pass the PC World Password Safety Test?"

A password manager stores multiple passwords so you don't have to memorize them. I recommend the free, open-source Password Safe program. It's easy to use, and it generates random passwords no one will ever guess (see **FIGURE 1**). All of your password data is safely Blowfish-encrypted (so that's one password you'd better remember). Go to find.pcworld.com/45176 to download your copy. ■

Send your questions to answer@pcworld.com. We pay \$50 for published items. See find.pcworld.com/31577 for more Answer Line columns. You'll find Contributing Editor Lincoln Spector's humorous and other writings at www.thelinkinspector.com.

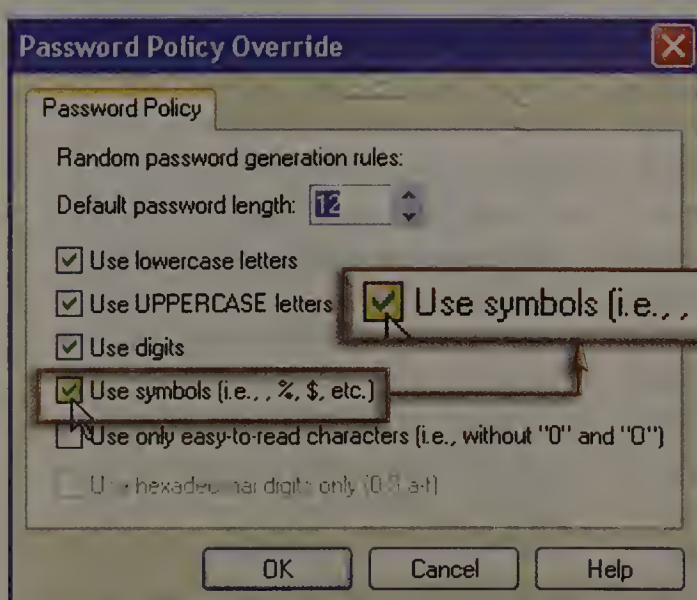


FIGURE 1: USE THE FREE Password Safe utility to generate new passwords that are impossible to guess.

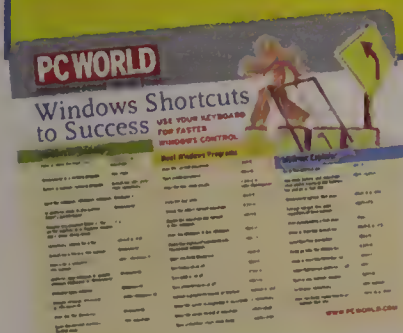
and the lost access to two accounts that use the same password. If you lose access to only one site, it could be something less scary—such as a failed attempt to steal your identity. Sometimes a site will shut down your account because of sus-

TWEAK YOUR TASKBAR

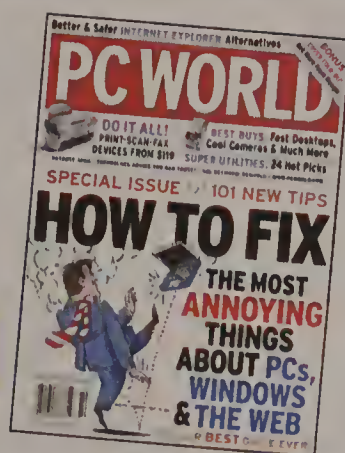
MATT VILDZIUS of Roswell, Georgia, found a cool way to add any text to your taskbar, whether it's your name, the computer's name, or a warning to stay off. Go to any out-of-the-way folder on your hard drive, right-click a blank spot in the folder, and select **New•Folder**. Name the folder with the text you want displayed on the taskbar. Now right-click an empty spot on the taskbar and select **Toolbars•New Toolbar**. Choose the folder you created, and click **OK**. You may want to adjust the new toolbar's size by sliding the divider to its left.

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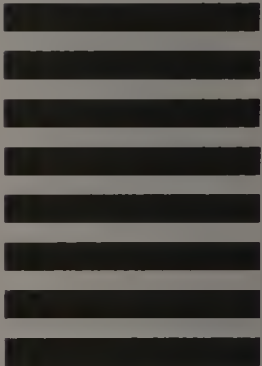
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- Dedicated IP
- Up to 7 Additional IPs
- Patch Updates
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Your monthly gross profit	\$124.75	\$499.00*	\$2,495.00**
Your monthly net profit	\$94.80	\$409.10	\$2,365.05
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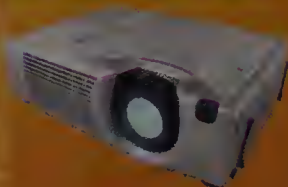
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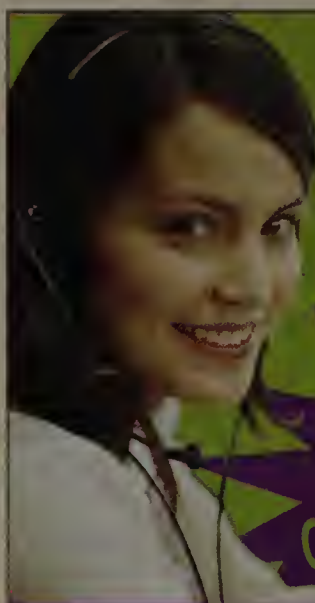
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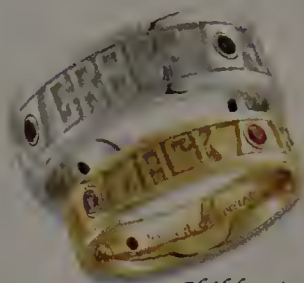
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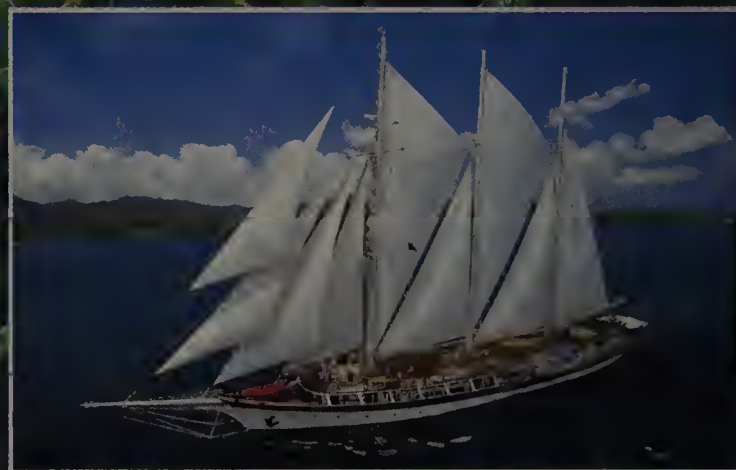
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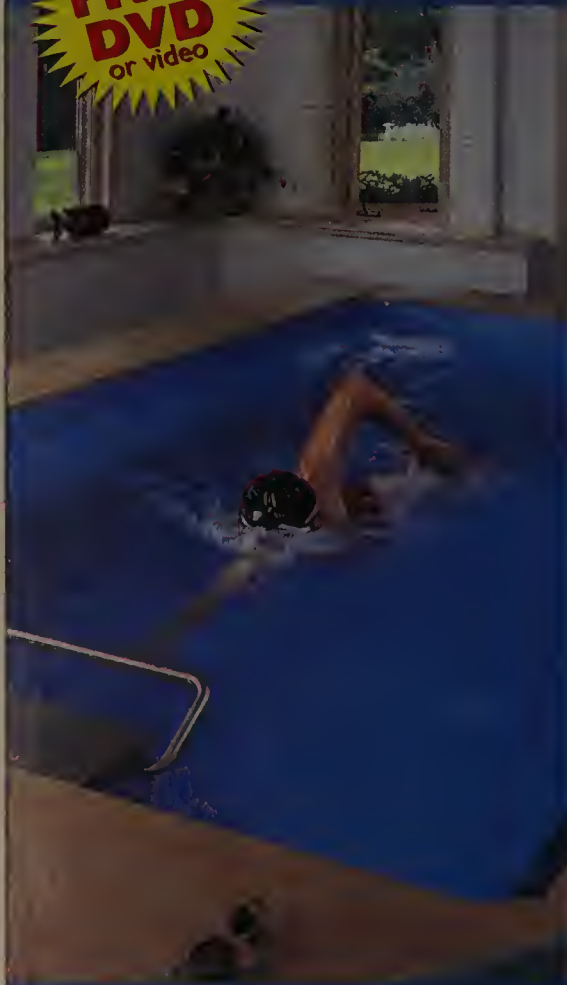
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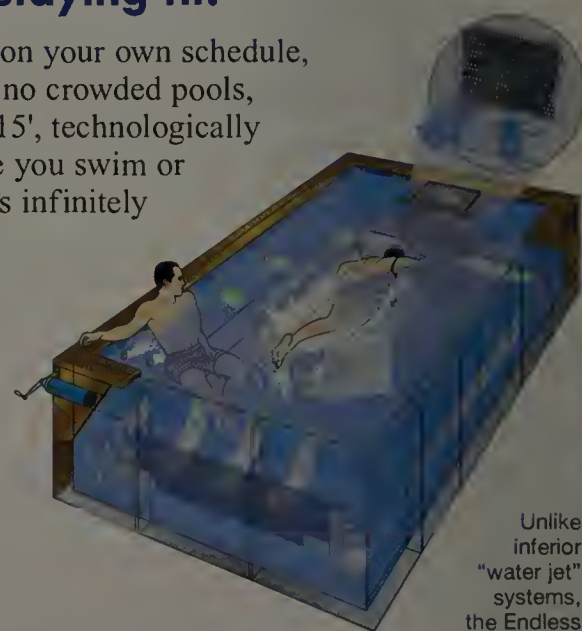
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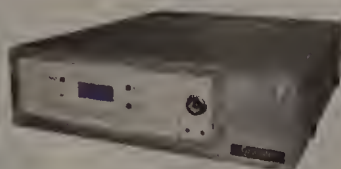
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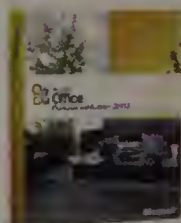
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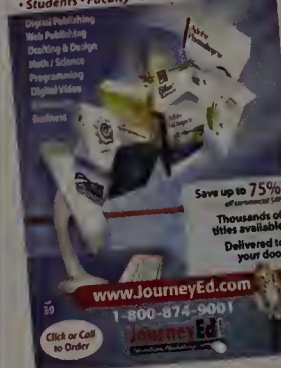
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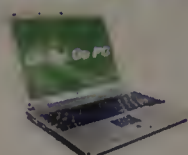
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Stupid PC Error Messages: Fatal!

WONDERFUL WAY TO BEGIN MY DAY: A startup DOS-style message appears; the PC's screen explains that a crucial system file is missing and that I should insert the restore CD-ROM. But in the chamber of horrible housekeeping that is my office, I have no idea where the disc is.

Next step: Denial. I reboot, or try to, and get the same message. That CD has to be around somewhere. It has to. I spend a couple of hours overturning every shred of clutter in the place. Nothing.

A few days later I try again. You know the thinking: Maybe it fixed itself somehow. And then I see something I missed before. Down in the lower-right corner of the computer manufacturer's startup screen, I see the phrase '<F10=System Recovery>'. That's when it hits me: There is no restore disc. This is one of those machines that comes with rollback data on the hard drive alone.

Admittedly, having the restorative option on the hard drive is handy when you can't find the CD. But there's no excuse for not supplying a disc that costs, what, 10 cents? And even worse is the generic message that's not only inappropriate but simply wrong.

This kind of thing happens constantly. Error messages and what I've come to call "monologue boxes" are supposed to help you solve problems. In reality, they're riddled with errors themselves—when you can figure out what they mean. Take my copy of Norton AntiVirus, which is supposed

to update itself automatically. I've repeatedly run into situations when the updater tells me that it has aborted—and, afterward, that my virus definitions are up-to-date. Which is correct? Who knows?

TurboTax still offers a classic in the annals of dialog-box stupidity. When you exit, it asks, 'Do you want to save this file?' But what it really means is, 'Do you want to save the *changes* you made to this file?' If you had simply been fooling

around with some what-if scenarios, the right answer might be 'no'. But if you were afraid you'd lose the file itself, you'd probably pick 'yes'—and wipe out some of the original data. How hard is it to get a basic question like this right?

Crummy error messages have migrated from our PCs to the Web. The archetypal example: A site wants data in a certain format—say, phone numbers without parentheses or hyphens—but doesn't say so. You enter information your way, then get a message that says something like 'incorrect data' with no clue as to what's wrong. Bad enough that the site doesn't

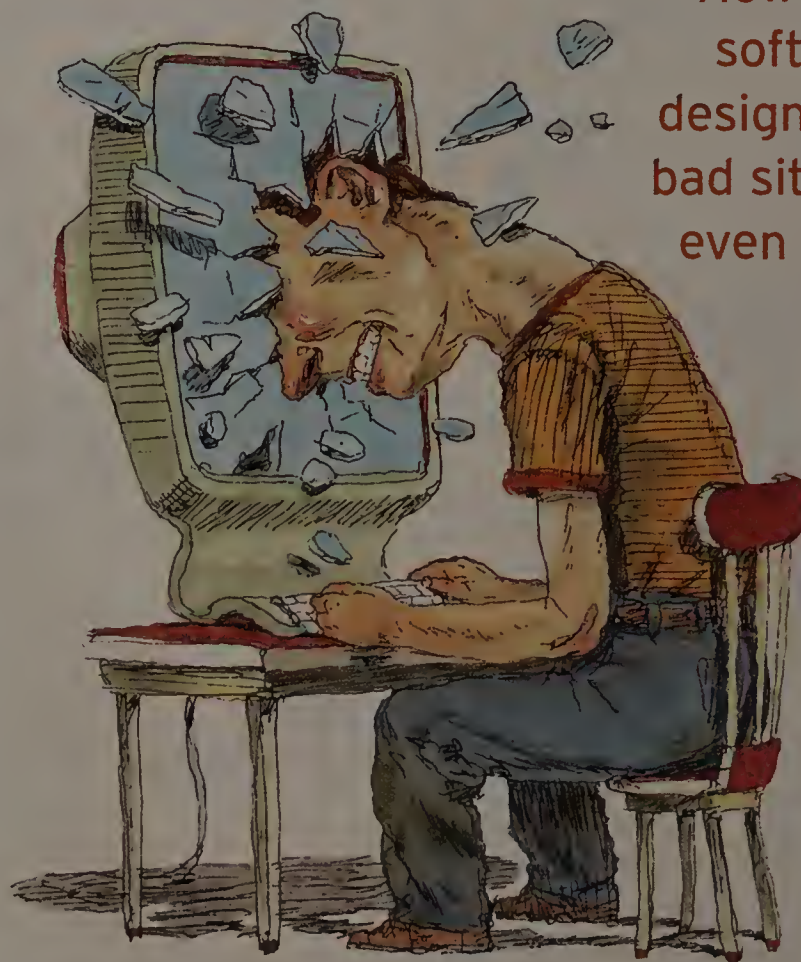
How lousy software design makes bad situations even worse.

dope out what you meant; often it will force you to reenter not just the phone number but everything else, too.

If this keeps up, maybe we should just replace all error messages with the ultimate generic

one Alan Cooper presented in his book on interface design, *About Face*. The message? 'It's obvious from your actions that you don't know jack squat about computers or software.' Your options? One button labeled 'I am not worthy', one marked 'Please kill me now', and one declaring 'I should go back to pencil and paper'. ■

Visit find.pcworld.com/31595 to see additional columns by Contributing Editor Stephen Manes. He has been writing about technology for two decades.



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